The RUBBER AGE

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VOL. 22, NO. 7 JANUARY 10, 1928

Many Important Personnel Changes Mark Beginning of New Year

Rutherford Resigns as Goodrich Vice-President—Rockhill and Four Assistants Leave Goodyear to Accept Sales Positions With Miller—Titus Made Sales Manager of Goodrich's Pacific Coast Plant—Tompkins Elected President of General Rubber Company

THE New Year has ushered in many changes in the executive personnel of the larger rubber manufacturing companies, changes which have come for the most part as distinct surprises to the entire industry. Such a shifting of personnel in one season has not been seen in the last ten years.

The principal surprise was the sudden announcement of the resignation of W. O. RUTHERFORD as vice-president and director of the B. F. Goodrich Company. Mr. Rutherford retires, according to his own statement, for a much needed rest and without any special plans for the immediate future.

The resignation of L. C. ROCKHILL as sales manager of the Goodyear Tire & Rubber Company to become general sales manager of the Miller Rubber Company, along with the switch of four other Goodyear executives to the Miller organization, was another unexpected change. General Rubber Company has elected L. D. TOMPKINS president to succeed H. STUART HOTCHKISS, who has held the post since 1917 and who was recently elected to the chairmanship of the board of directors. HUGH BULLOCK, formerly president of the Converse Rubber Company, has become identified with the Tyer Rubber Company. The B. F. Goodrich Company has also announced several new appointments in connection with its Los Angeles factory and other promotions within its organization.

Miller Changes Pending

No statement has been forthcoming as yet from either Mr. Rockhill or the Miller Rubber Company relative to the changes in the latter company's organization other than the bare announcement of Mr. Rockhill's appointment. Along with Mr. Rockhill, the following Goodyear executives will also go over to the Miller organization: F. W. LOHMANN, assistant sales manager and right hand man to Mr. Rockhill; WILLIS C. BEHOTEGUY, manager of the auto tire sales department; GEORGE EARSEMAN, manager of the sales personnel department, and G. E. BRUNNER, manager of the truck tire sales department.

It is understood that FRANK C. MILLHOFF, present sales manager of the Miller Company, will remain with the organization but no announcement has been made as to what position he will fill in the new sales reorganization.

The Goodyear Tire & Rubber Company has announced that R. S. WILSON, who was appointed advertising manager of the company early last year to succeed L. L. King, would now succeed Mr. Rockhill as sales manager and G. A. WADDLE, manager of the dealers' relation division of the sales department, would become assistant sales manager.

W. O. RUTHERFORD

Mr. Rockhill has been a prominent figure in the rubber industry for many years. His first connection was made shortly after leaving college, when he joined the Goodyear organization in 1907. His career with the company has been one of continued advancement and success. He has held successively the posts of manager of the factory repair department, assistant manager of auto tire department, manager of the aeronautic department, manager of the auto tire department, manager of the merchandising department and was appointed general sales manager in 1919.

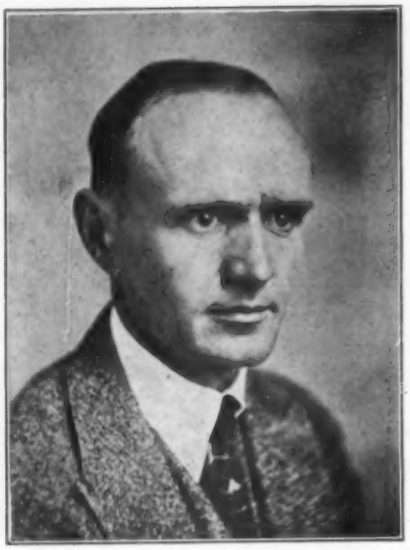
Mr. Lohmann, who has been closely associated with Mr. Rockhill, has been with Goodyear since 1914 and was appointed assistant sales manager in 1920. Previous to that he was special representative in the western division, a member of the board of control and manager of the truck tire department.

Both G. E. Brunner and Willis Behoteguy have also been with the Goodyear organization for long periods and have been prominently identified with the successful sales policy of Mr. Rockhill.

Rumors of Merger Denied

Coincident with the appointment of these Goodyear executives to the Miller organization, rumors were current that a merger of the two companies was contemplated but a denial was promptly made by officials of the two organizations.

This wholesale transfer of the chief pillars



L. C. ROCKHILL

of the Goodyear sales organization to Miller Rubber Company comes as a startling surprise to the entire industry but is seen as a move to build up the forces of the Miller organization after a year of poor business. The Miller company passed its quarterly dividend recently, and for some time it has been known in the industry that its position needed strengthening.

C. T. HUTCHINS, assistant advertising manager, will succeed to Mr. Wilson's post as manager of the Goodyear advertising department. JOSEPH MAYL has been promoted from assistant to manager of the bus and truck tire sales department to succeed G. E. Brunner and C. E. CANNON, assistant sales personnel manager, will become manager to take the post vacated by George Earseman. Another assistant manager in the advertising department has also tendered his resignation, ARTHUR W. SPORE, who leaves the service of Goodyear after thirteen years. He has made no announcement as to his future plans.

Promotions Result of Long Service

All of the new promotions announced have been awarded to men who have been long in the service of the Goodyear organization. Mr. Hutchins started with the company in 1914 and was branch manager for the Pacific coast division for some time, later returning to Akron in charge of sales promotion and recently promoted to the assistant managership of the advertising department. Mr. Mayl has been closely associated with the truck tire business of the company for several years as manager of bus transportation and assistant manager of the bus and truck tire department. Prior to his joining the Goodyear organization in 1924, he was for fourteen years a branch and district manager for the Firestone Tire & Rubber Company. Mr. Cannon began with the company fifteen years ago in the factory and rose to the position of the manager of sales personnel in the California plant of the company, later returning to Akron for special work and as assistant to Mr. Earseman.

Mr. Rutherford's retirement from the B. F. Goodrich Company, comes after 26 years of service with the Goodrich organization and after he had worked upward through many important executive positions with the company until he had attained a position of outstanding prominence in the rubber industry. He joined the Goodrich organization in 1900 and through a series of promotions became western district manager with headquarters in Denver. Because of his signal success in handling sales problems he was soon brought back to Akron and in 1917 became vice-president of the organization. During the war he was prominent in the solution of governmental problems connected with the rubber industry. He was also at one time president of the Rubber Association of America. Up to January 5, no successor had been named by the Goodrich Company to take Mr. Rutherford's place, but it is expected that a selection will be made from among the present sales staff.

The B. F. Goodrich Company also announced various changes and promotions amongst its personnel, effective January 10.

F. E. Titus Goes to Coast

The Pacific coast sales organization of the Goodrich company will be headed by F. E. TITUS, formerly district manager of the New York territory and who is now named general sales manager of the western plant. E. S. SARGEANT, credit manager in the Akron plant, is named secretary and treasurer at Los Angeles. F. A. NIED, of the Akron production department, has been named plant superintendent at Los Angeles. E. C. CORY of the auditing department at Akron, has been promoted to auditor for the new plant and A. D. MCPHERSON, from the purchasing department at Akron, will be the new purchasing agent at Los Angeles.

T. A. ASPELL, who has been manager of the truck and bus tire department has been appointed assistant manager of the manufacturers' sales division at Goodrich and will also have supervision of government and aeronautical sales. H. M. BACON, former district manager on the Pacific coast, is being brought back and will act as special representative of the manufacturers' sales division with headquarters at Cleveland. C. B. O'CONNOR, who will succeed Mr. Aspell as manager of the truck and bus tire department, was formerly manager of the specialized sales department.

E. R. KENNER succeeds F. E. Titus as district manager at New York. Immediately previous to his new appointment, he was special sales representative for the truck and bus tire department at Akron.

Leavitt Returns to Akron

A. H. LEAVITT, formerly manufacturers' sales representative at Cleveland, in the post now to be occupied by H. M. Bacon, will return to Akron as representative for the truck and bus tire department. J. T.

F. E. TITUS

KENNEDY has been appointed manager of the manufacturers' sales division in Detroit, to succeed Gregory Flynn, who will be transferred to New York to take charge of the manufacturers' sales division in New York, Boston and Philadelphia.

JAMES C. LAWRENCE, formerly president of the Faultless Rubber Company, of Ashland, Ohio, has been appointed assistant to the president of the University of Minnesota. Mr. Lawrence will act for the president in both educational and administrative matters, the new position having been created at the University to relieve the burden of too heavy demands now on the president, L. D. Coffman.

Mr. Lawrence has been president of the Faultless company almost two and a half years and came to Ashland from Racine, Wis., where he had been president of the Racine Tire Company for four years. For twelve years previous to that he had been connected with B. F. Goodrich Company.

Young Leaves Pioneer

JOHN YOUNG has resigned as president and general manager of the Pioneer Asphalt Company, Lawrenceville, Ill. He has also severed connections with Wishnick-Tumpeer, Inc. Mr. Young is now in the East but has not announced his future plans.

E. T. MORRIS, formerly advertising manager and assistant sales manager of the American Rubber and Tire Company, Akron, Ohio, has become associated with the B. F. Goodrich Rubber Company as district advertising manager, covering one of the Eastern districts. His headquarters will be in Philadelphia.

HUGH BULLOCK, former president of the Converse Tire and Rubber Company, is reported to have purchased an interest in the Tyer Rubber Company, and is expected to take an active part in the management of the company.

AJAX McCLAREN MERGER ANNOUNCES POLICIES

McClaren Rubber Company Retains Own Identity—H. L. McClaren, President of Consolidated Company, Establishes Headquarters at Ajax Plant.

BY the unanimous approval of the stockholders of the respective companies, the merger of the McClaren Rubber Company and the Ajax Rubber Company is complete. The consolidation will be along the lines as reported in the last issue of THE RUBBER AGE.

It has been officially announced that, while under the new arrangement, the Ajax Rubber Company acquires the corporate stock of the McClaren Rubber Company, the latter concern retains its complete identity. H. L. McClaren, who has been elected president of the consolidation, will also continue as president of the McClaren Rubber Company, which will be operated as an individual unit, with the same sales program and policies which have been pursued in the past.

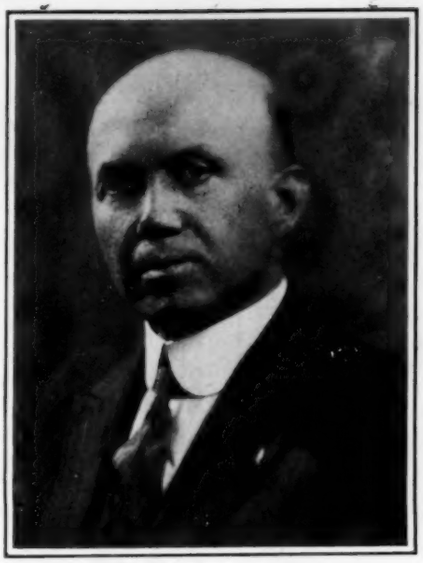
Mr. McClaren plans, however, to move his headquarters to the Ajax factory at Racine, Wis., but will continue to direct the policies of the McClaren Rubber Company at Charlotte. He will leave Charles R. Collins as general manager of the McClaren company at Charlotte.

Returns To Old Post

It is an interesting sidelight on the new merger that H. L. McClaren again assumes his previous position as active head, in the capacity of president, of the Ajax Rubber Company.

Mr. McClaren's experience in the tire field dates back to 1900, when he accepted his first position as stenographer for the late George M. Stadelman, who at that time was in charge of sales of the Morgan & Wright Tire Company prior to the formation of the United States Rubber Company. From this position Mr. McClaren worked into the sales organization of that company, holding the office of Pacific Coast sales manager, and later, when the United States Rubber Company was formed, having charge of tire sales in the central division.

In 1912 he left the United States Rubber Company and became sales manager of the Racine Rubber Company, from which position he was raised to president and general manager. When the Ajax Rubber Company bought the capital assets of the Racine Rubber Company, he went with the former concern as vice-president in charge of sales. Shortly thereafter he was elected president and general manager, which position he held until May, 1919, when he resigned and bought into the J. & D. Tire Company, located in Charlotte, N. C., and went with that concern as president and general manager. The name of this company was changed early in 1920 to the McClaren Rubber Company.



H. L. McCLAREN

It is understood that several months ago Mr. McClaren was approached by a committee appointed by the directors of the Ajax Rubber Company, Inc., with an offer for obtaining his services. The present arrangement was worked out and finally accepted whereby he is to assume the position and responsibilities of president and general manager of the Ajax Rubber Company, Inc., and the presidency of the new consolidation.

Further authority vested in Mr. McClaren to nominate the majority of the Ajax board of directors. On the new board of directors will be four of the present officers and directors of the McClaren Rubber Company—H. L. McClaren, C. C. Coddington, R. A. Peavey and Lee A. Folger.

Hotel Headquarters

Representatives of many of the well-known rubber chemical and equipment houses will visit New York City during the week of January 8 to attend the Rubber Association dinner and other meetings held during Automobile Show Week. The following list shows the hotels in which some of the companies will have their headquarters and welcome their friends:

National Aniline & Chemical Co. — **Commodore**
Messrs. Kerr and Boehm

Utility Manfacturing Co. — **Astor**
Edward Hutchens

Roessler & Hasslacher Chem. Co. — **44th St. Hotel**
Messrs. Kuschler, Nahm and Larkin

Black Rock Manufacturing Co. — **Commodore**
G. L. Hammond

Clyde E. Lowe Co. — **Biltmore**
Clyde E. Lowe

Cleveland Liner & Mnfg. Co. — **Waldorf-Astoria**
C. A. Pope

Grasselli Chemical Co. — **Roosevelt**
H. H. Replogle

Binney & Smith Co. — **Commodore**
Messrs. McRae, Wiegand, Kitchel, Venuto, Braendle, Higgins and Finch

R. T. Vanderbilt Co. — **Cornell Club**
A. A. Somerville

E. I. DuPont de Nemours Co. — **Biltmore**
Messrs. Wolff, Read, Flack

Dovan Chemical Co. — **Commodore**
Messrs. Doty, Woodward, Breckley, Kendall

N. Y. AND LOS ANGELES GROUPS TO MEET SOON

Chairmen Somerville and Stringfield Announce Technologists' Meetings for January—Endres, of Celite Company, to Speak Before Los Angeles Group.

TWO of the local groups of rubber technologists now being organized by the Rubber Division of the American Chemical Society have completed plans for their first meetings. The New York group, under the chairmanship of Dr. A. A. Somerville, will meet on the evening of January 11 at the Beaux Arts Grill, New York City, and will be addressed by F. R. Henderson on the subject, "The Buying and Selling of Crude Rubber." The Los Angeles group, which is being organized by R. B. Stringfield, will hold its first meeting on January 20 at which time Herbert A. Endres of the Celite Company, Lompoc, Cal., will speak on "The Crystalization of Sulphur in Rubber and the Phenomenon of Blooming."

The Akron group organization is being rapidly perfected with R. P. Dinsmore as chairman. No effort will be made to hold a meeting in Akron in January in view of the other group meetings and the fact that January is otherwise a busy month. The first Akron meeting is now scheduled for about the middle of February. The speaker has not yet been announced. Mr. Dinsmore expects the Akron group to be one of the largest and most active after it gets under way.

Plans for the Boston group are as yet uncertain. C. R. Boggs of the Simplex Wire & Cable Company has been asked to undertake the work of organization but there is a possibility that the rubber technologists in the Boston territory will decide to hold their meetings in conjunction with the Northeastern Section of the American Chemical Society which is already organized. The subject matter of such joint meetings would deal entirely with rubber.

Dr. Somerville reports an enthusiastic acceptance of his invitation for technologists and others in the industry to come to the first New York group meeting. Reservations are being steadily received, some companies arranging to have as many as twenty-five of their representatives attend. The meeting will begin at 6:30 p. m. Dinner will be served at 7:00 and Mr. Henderson will begin his talk at 8:30. Ample time will be allowed for discussion following the talk. The dinner will be informal. The committee in charge urges that reservations be sent to Dr. Somerville, 50 East 42nd street, New York, as early as possible. The price is $1.50 per plate.

Mr. Endres will illustrate his speech before the Los Angeles group with an extensive set of slides which he has prepared.

Additional News Items Will Be Found in a Section Starting on Page 371

NATIONAL

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Moderate Reduction in Rubber Stocks Due in 1928

Preliminary Estimates Indicate Cut of Around 60,000 Tons During the Year—Tightening of Restriction is Principal Factor—Consumption Likely to Increase—Ample Stocks to Prevent Runaway Prices

IT seems to be generally conceded in the rubber industry that the now ample crude rubber stocks will be reduced in 1928 through the failure of production to keep pace with consumption. The principal interest accordingly lies in the extent of the reduction. Up to a certain point a reduction in stocks would have only a moderate effect on raw rubber prices. Beyond that point lies the danger of a runaway market such as was experienced in 1925. This fact is believed to warrant the drawing up of some preliminary estimates for 1928 although much of the necessary data is yet incomplete.

The expectation of a reduction of stocks in 1928 is based both on an anticipated decrease in production and an increase in consumption. With a constantly increasing number of automotive vehicles in use throughout the world, a gradual increase in consumption, year after year, must naturally be looked for. A decrease in production calls for more explanation.

Restriction To Be Tightened

It is commonly accepted that less rubber will be produced in 1928 than in 1927 by reason of the stricter application of rubber restriction in British Malaya and Ceylon. During all of 1927 the exportable percentage applicable under the restriction scheme was well under 100 per cent; during seven months of the year the exportable percentage stood at 60 per cent, the minimum under the present regulations. Yet Malaya showed a capacity to export a surprising tonnage or rubber, mainly through the use of coupons which had been carried over from previous quarters when 100 per cent had been exportable. The fact that these coupons were carried over, instead of being used in the quarter in which they were issued, was ample proof that too many coupons were being issued or, in other words, that the assessed standard production against which the exportable percentage was being applied was too high. The natural result was that the principal effort at "tightening" restriction to make it truly effective was directed toward a reduction in the assessed standard production.

The means by which this was done has already been explained in THE RUBBER AGE. It relates chiefly to assessing the potential production of each estate on the basis of an altered tapping system, a system which would yield about one-sixth less in any period than the system formerly considered as being in use. This action, together with new provisions for curbing the smuggling of rubber out of the restricted areas, was taken on the first day of last November, the beginning of the sixth restriction year.

During the fifth restriction year the assessed standard production of Malaya stood at 334,000 tons; that of Ceylon stood at 74,000, while the islands of Sinapore and Penang were credited with being able to produce 6,000 tons. This made a total standard production of 414,000 tons. We have just observed that the changed basis on which standard production will be assessed in 1928 will mean a reduction of one-sixth. The figure of 414,000 tons would accordingly be brought down to 345,000 tons.

Preliminary Estimates of Production and Consumption of Rubber in 1928

	Tons
Production	
Malaya and Ceylon (60 per cent basis)	228,000
Malaya and Ceylon (Surplus coupons and smuggling)	20,000
Dutch East Indies (Estate and native, dry basis)	236,000
Other Eastern Producing Countries	40,000
Americas and Africa	42,000
Total	566,000
Consumption	
United States	400,000
Other Countries	225,000
Total	625,000
Probable Reduction in World Stocks	59,000

It is almost necessary, however, to make some allowance for lax application of the new provisions here and there. As in all governmental administrations of this sort, the right sort of influence will be brought to bear in certain quarters. Furthermore, many of the individual assessments will be appealed, some of them successfully, in the hope of securing higher assignments. We will accordingly be justified in increasing the figure of 345,000 tons by a small margin, certainly by as much as 5,000 tons, which will bring it up to 350,000 tons.

Rubber Coming Into Bearing

But a more important addition must be made on the basis of new rubber coming into bearing or tappable rubber coming nearer its maturity. The effect of this factor is difficult to compute, particularly on account of the unsatisfactory figures bearing on the acreages of rubber being planted five to eight years ago. Most authorities, seem to concede, however, that a natural increase of 30,000 tons would not be too much to expect. The yearly increase made in the assessed standard production annually in the past on account of rubber approaching maturity has been somewhat higher. If the figure of 30,000 tons be accepted, it will bring the standard production for Malaya and Ceylon, including the islands, up to 380,000 tons.

The figure of 380,000 tons is, of course, merely the figure to which restriction is applied. At the present moment only 60 per cent of the standard production is exportable. It also appears possible at the present moment that all of 1928, certainly the greater part of it, will pass without a change in the exportable percentage. This is due to the high pivotal price now provided for in the restriction scheme. A price of better than 1s. 9d. (42 cents) must be maintained for nine months to earn an additional 10 per cent. An average price of 2s. (48 cents) in one quarter will earn the same addition. The average price in the present quarter, which ends on January 31, will obviously not reach 42 cents. In fact, it is quite

possible that the price of 42 cents will not be ruling when the next quarter begins.

If the exportable percentage of 60 per cent were effective during all of 1928, and we accordingly applied it to the standard production of 380,000 tons worked out above, it would give Malaya and Ceylon license to export 228,000 tons in the year. This they could of course easily do.

Two additional factors must also be considered. These are: (1) unused coupons still valid and outstanding which will be subject to use during the year, and (2) smuggling. Both are difficult to judge, the latter for obvious reasons, the former on account of lack of definite knowledge of coupons to be used.

The increase of foreign imports of rubber into Singapore for transshipment during 1927 was held to be due in large part to smuggling. In other words, Malayan rubber was being brought back to Malaya for marketing. The amount of rubber smuggled out of Malaya in 1927 has been variously estimated. A figure of 20,000 tons is generally accepted as being not too high. During 1928, as a part of the "tighten restriction" effort, a larger number of government launches will be available to combat the smugglers. Yet, a veritable navy would be necessary to patrol all the Malayan coast line. Moreover, the tendency to smuggling increases with the tightening of restriction. Smuggling will assuredly continue in 1928. A decrease to 10,000 tons is probably all that can be expected. Outstanding coupons will be responsible for the outlet of at least another 10,000 tons. This makes a total of 248,000 tons which may be expected from Malaya and Ceylon in 1928.

The next important producer after the British colonies is, of course, the Dutch East Indies. Although production figures for the latter months of 1927 are not yet available for these islands, it is apparent that a considerable increase in production was made in the year, the greater part of this increase being due to native rubber. The 1927 production, on the basis of the figures at hand, bids fair to have reached 226,000 tons. An increase in 1928 may logically be expected although the factor of native rubber is as difficult as ever to judge. The best authorities are convinced that the output of native rubber will continue to show an increase and extensions of estates in Sumatra will also contribute. It seems conservative to expect an increase of at least 10,000 tons in 1928, making a total output of 236,000 tons of dry rubber in the year.

Other Rubber Producing Areas

The production of other plantation areas in the Middle East has not shown the same ability to increase, except possibly through the re-export of rubber smuggled out of the restriction areas. These other areas, including Borneo, Sarawak, India and Burma, Siam and Indo-China, have shown an ability to produce about 40,000 tons per year and while there may be some slight increase in the next year, it is probably wisest not to count upon it.

Under the stimulation of firmer rubber prices the output of the Americas and Africa, mainly of wild rubber, will probably show some slight gain. Recent figures of the Department of Commerce indicate that the total figure for Africa, when it is finally available, will show a decrease as compared with 1926. The Amazon will apparently show a small gain, offsetting the African loss and probably holding the total production for the two regions to 40,000 tons, including guayule. As just suggested, some increase in this figure may be effected in 1928 by reason of higher prices and it is probably conservative to expect at least 42,000 tons from them.

When these production figures for the various rubber producing areas are brought together, a total production of 566,000 tons for 1928 is indicated. It will be remembered that this presumes that restriction will continue on a 60 per cent basis throughout 1928.

Turning now to consumption, the first fact of importance is that the United States, the principal consumer, failed in 1927 to consume the 400,000 tons estimated for her by many authorities earlier in the year. The December consumption figure will shortly be published. Pending its appearance, it may be estimated that it will about equal the November figure of slightly under 27,000 tons, which would mean that during all of 1927 the United States consumed 373,000 tons. Conditions favor an increase in 1928, probably to the 400,000 tons which was vainly looked for in 1927. This is an increase of only 7½ per cent which may not seem sufficient to those who look for a great increase in automotive production in the year. However, the gain will apparently be in light cars. Furthermore, the retirement of cars each year has now reached a point where the net registration gain is not such a high percentage factor as it was several years ago.

Outside the United States slightly more than 200,000 tons of rubber are expected to be consumed in 1927. Statistics for the latter months of the year are still lacking but on the basis of reports to the Department of Commerce, an estimate of 205,000 tons is being commonly accepted. This is an increase of roughly 30,000 tons over 1925. The increase should continue, if one judges by the potential automotive market throughout the world as well as the active production of motor cars in Europe and the high exports from the United States. A further increase of 10 per cent, or to a total consumption of 225,000 tons, is reasonable.

Consumption Estimated at 625,000 Tons

If these figures prove to be reasonably accurate, a world consumption in 1928 of 625,000 tons will result, a figure 59,000 tons in excess of the probable production figure developed above. This amount will therefore represent the approximate amount to be drawn from stocks.

At the beginning of 1928 London stocks amounted to 63,000 tons, having been reduced from more than 70,000 tons in October. At the end of November, according to the Rubber Association, stocks on hand in the United States were 101,000 tons. Imports and consumption in December apparently maintained a close balance so that U. S. stocks at the end of the year probably did not change much but remained at around 101,000 tons. This would mean a total stock in the United States and London of 164,000 tons to be drawn on for consumption. Stocks in primary markets, in other consuming markets, and afloat, may rightly be regarded as current stocks and subject to little change.

If world consumption exceeded production by 59,000 tons in 1928, it would mean that the U. S. and London stocks would be reduced by that amount, or to 105,000 tons. The question of the extent to which such a reduction would affect rubber prices is the one that faces the manufacturer. With annual consumption on a 625,000 tons basis, 52,000 tons would be needed per month. Stocks of 105,000 tons would accordingly represent less than a two months' supply on hand for consumption. This would probably mean an gradual increase of several cents per pound in the price of the raw commodity as the reduction in stocks came about. Since the reduction would be only gradually effected, however, and stocks would not be reduced to any such basis until late in 1928, it appears reasonable to suppose that firm or gradually strengthening prices may be expected in 1928 rather than runaway conditions of any sort as has been feared in some quarters. Even with the tightening of restriction, 1928 does not appear dangerous from the standpoint of adequate rubber at a fairly moderate price. Before the end of the year any number of factors may appear to change these figures and to safeguard the following season.

Steps in the Manufacture of Hard Rubber Combs

Plating of Stock and Cutting of Blanks—Use of Comb Dies—Vulcanization and Cooling Under Water—Grinding Edges—Pumicing, Polishing and Stamping

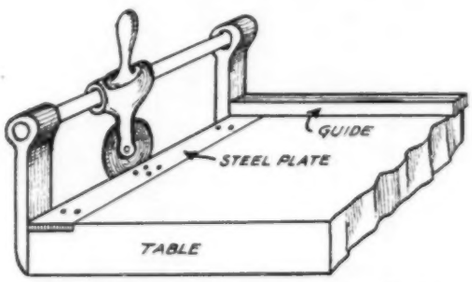
By G. A. VURGASON

ALTHOUGH the hard rubber comb is only one of the thousands of articles made of hard rubber, it is the saviour of that industry by reason of its being one of the few articles made of the material that has a constant demand. It is depended upon to carry many plants through the dull summer months.

Many skilled workmen are required in the production of combs. These include die sinkers, platers, pressmen, strippers, automatic tooth cutting machine operators, sawers, rubbers, tooth setters and polishers. All or most of these are necessary for the production of the standard combs.

Combs are not molded to shape in steel molds as might be imagined by many people not familiar with the process. Instead, they are cured in a tin sheathing which serves as a mold. This sheathing is given its shape and design by means of a steel die.

The die, although a simple looking affair, requires great skill in its construction. A die is constructed of two halves,

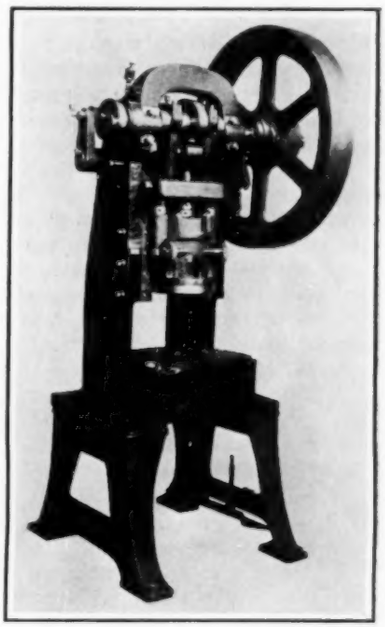


Hand Device for Cutting Comb Blanks

upper and lower. A template or model of one-half of the comb is cut into a steel plate. This is usually done by hand by an engraver. From this template the steel dies are cut by means of a small machine on the principle of a pantograph or profiling machine. Great care must be taken that the teeth on both plates register perfectly. If this were not done, overshod teeth would result when a comb was pressed between the two halves of the die. After the die is completed, two holes are drilled through the plates for the bolts which fasten the die in the hydraulic press.

The stock for combs should be built up on the calender drum in thickness of 1/16 inch until the desired thickness is attained. This method prevents the compound trapping air and insures a uniform thickness throughout. Before the stock is pressed into comb shape in the hydraulic press, it must be plated on both sides with tin. This may be done either before or after the stock is cut into sections approximating the size of the combs to be manufactured. All plating for combs is done by hand.

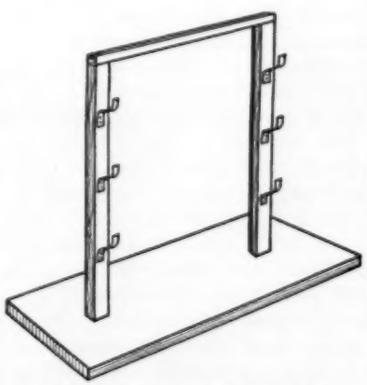
When a large sheet of stock is to be plated before being cut into sections, the first step is to place a sheet of tin on a steam table and swab it with kerosene oil. To the tin is applied a sheet of the unvulcanized calendered stock. The stock is rolled down until all air is forced out from between the compound and the tin. When this operation is completed, the exposed surface of the compound is swabed with kerosene oil as was the first sheet of tin. To this exposed side is applied the top sheet of tin which is then rolled down thoroughly. It is of the greatest importance that all air be excluded.



Bliss Double Action Cam Press

The rolling operations are performed by two men, one on each side of the steam table. The rolling is done lengthwise and crosswise. A roller like a huge rolling pin is used for this work. The roller weighs about 150 pounds. Great care must be taken that the rolling is thoroughly done and that the rubber adheres to the tin throughout.

After rolling, the sheet will have a tendency to adhere to the steam table, due partly to a vacuum created by the rolling. To loosen it a long bladed knife of the spatula type is slid under the sheet. When removing the plated sheet from the steam table the workmen must be careful not to bend it as this is apt to cause a separation between the tin and the rubber. The sheet should be slid to one side of the table and lifted up straight, being grasped on the long edges.



A Handy Type of Rack for Holding Uncured Combs

From the steam table the sheet is passed to an-

Automatic Strip Grinding Machine Which Will Grind Both Sides of a Comb Blank at the Same Time

other table where it is again rolled down, this time with a roller weighing about 500 pounds. This roller is operated by hand and runs on a track mounted on either side of the table. The different thicknesses of sheets are taken care of by laying shims on the track.

Applying the tin to the rubber after the compounded sheet is cut into sections is simpler than the plating process which has just been described. The compounded stock is cut into pieces with the required dimensions. Tin of the same size as these compounded blanks is also cut. Then the tin is sandwiched in between the rubber blanks and pressed in this way. This is a satisfactory as well as a simpler method. It eliminates the costly plating operations and will increase production 100 per cent.

If the stock is plated before it is cut, the cutting can be done on a simply constructed device consisting of two brackets, a piece of one-inch cold rolled steel and a sliding bracket to which is attached a disc knife.

Comb dies may be cut so as to press the teeth into the comb or they may be made plain so that the teeth will have to be completely cut after the comb is vulcanized. For combs where the teeth are pressed in with the die, a very soft tin must be used as hard tin will split and wrinkle under the pressure of the die. Soft tin will stretch. Two recommended brands are Lamb and Flag or Williams and Harvey. These are almost pure tins and are accordingly very soft.

Use of Tin Covering

Where the teeth are not to be molded in but are to be cut after vulcanization, a harder tin gives best results. Hard tin gives the vulcanized comb a smoother finish so that less polishing is required. The following formula will give good results: 95% pure tin, 2% bismuth and 3% lead.

A slow-moving geared cam press is used for pressing the unvulcanized combs. The dies are fastened in as mentioned above and the plated blanks are inserted. Each press is operated by a pressman and one or two helpers, the former operating the press and the latter removing the scrap squeezed out. The helper also punches a small hole in one end of the tin that laps over and inserts a small wire hook shaped like an "S." These hooks are used for hanging the pressed combs on wooden frames which hold a series of small rods or pipes. The rods are removable and are used for hanging the pressed combs in the tank cars while they are being vulcanized. The rods are held in place by notches on the sides of the tanks. When loaded, the tanks are pushed into the heaters.

The combs are completely submerged in water during vulcanization. Combs require a longer and lower heat than do most articles made of hard rubber. After being vulcanized, the usual practise is to allow the combs to remain under water on the racks in the cars until cool. This prevents bending and shrinking. When cool the hooks are removed and the combs are then ready to have the tin stripped off.

To remove the tin from the combs, the operator holds the comb in one hand and catches the edge of the tin with a pair of pliers and gives a quick pull. This removes one side and the same operation must be repeated to remove the other side also.

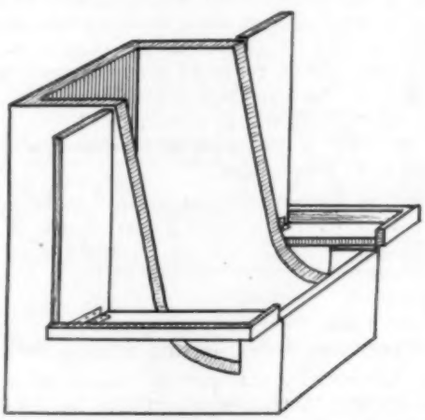
To remove the mold fin from the vulcanized combs, the operator grasps as many as possible in one hand and holds them on a flat surface with the fins up. Then with a flat stick he beats off the fin by pounding straight down on the edge. This operation is only a preliminary one to remove excess scrap. A dull file can be used in place of the stick. The force of the blows must be carefully regulated to prevent breaking the combs.

The excess scrap may be ground from the edges of combs either on non-automatic or automatic machines. In the former, the operator sits before a single unguarded grinding wheel and holds two combs, one in either hand, against the sides of the stone.

Automatic Grinder Designed by Author

Automatic grinding may be done on such a machine as the one illustrated herewith. This was invented by the writer and although it was originally used for the grinding of strips of hard rubber to a tolerance of .002 inch, it can be used very successfully for the grinding of comb blanks. One man can operate six machines at a time, both sides being ground at one time. Blanks can also be fed between two stones, a guide being provided to keep them from twisting. The speed of the wheel carries them through.

All combs must be sawed, regardless of whether the teeth have been pressed in or not. Most of the sawing equipment is of special manufacture although the sawing machine is a simple contrivance, consisting of a single stationary spindle with the saw set in the center. The saw must run dead true.



Mud Buff Box—The Hinged Wings are Raised When Buff is Set in Place

The comb is held in a clamp that works like a hinge, having a weight attached to draw it down. A spindle with a cam is the only intricate part. The cam has a thread which at each turn moves the hinged clamp up the space of a tooth. The cam also raises the clamp away from the saw at each revolution, after which the weight pulls it back into operating position. This operation is repeated until the clamp reaches the end and is released by a trip. Coarse and fine teeth cannot be sawed on the same machine and each machine has but one setting, the threads on the cam controlling the spacing. For a number of years only one comb was held in a clamp and sawed singly

but it has been learned that two can be held in the same clamp and sawed just as successfully.

After the teeth are sawed in, the combs are rubbed on a buff made of corn husk. Wet pumice stone is used as an abrasive. The operator holds six or seven combs at a time when rubbing down the backs of the combs. The teeth must also be rubbed to remove all roughness from sawing. The buff is like an ordinary felt buff except that cornhusks are used in it. The pumice should be applied to the buff while wet. The buff is placed in a mud box to prevent the pumice from flying. The excess pumice is caught in the box. When the operator needs additional wet pumice for his buff, he reaches down into the box for it. When the combs are completely rubbed they are washed to remove all pumice and are then allowed to dry.

The teeth on all cut combs must be straightened, especially the end teeth as these are spread apart from the central teeth during the cutting operation. This operation of straightening the end teeth is called "pointing up." The combs are heated on a steam table until they become flexible after which the end teeth are gently forced back into their proper position. Finished combs of the same type are used as wedges for this operation, the teeth of the two being pushed into each other. When the warm comb has cooled, its teeth will be as perfectly aligned as were those of the one to which it was fitted.

Description of Final Operations

The remaining operations are polishing and stamping. The first step toward the finished polish is pumicing. This is comparable to wood filling a new floor before varnishing it. A good pumice compound is made of 7½ pounds beeswax, 15 pounds mutton tallow, 7½ pounds rosin and 65 pounds pumice dust. The wax in the pumice has a tendency to fill up all porosity in the combs and the fine pumice smooths it down. The ingredients are boiled together and allowed to cool sufficiently to handle after which the mass is formed into balls or cakes of a size convenient for handling. The buffs used for this pumicing operation are made of canton flannel discs and should be 14 to 16 inches in diameter and have a thickness of four or five inches when compressed with side plates.

Polishing is done on the same sized buff as is used for pumicing, each operator having two buffs on the same spindle, one coated with polishing compound and the other clean. The latter is used for the final wiping operation. There are several hard rubber polishing compounds on the market, one called "Nulike" being among the best. It is cheaper to purchase the compound than to try to make it.

Combs are usually stamped by means of a foot press. A bed must be constructed to fit the back of the comb. Stamping with gold requires heat as coin gold or bronze will not adhere otherwise. Heating is accomplished by the use of water or a steam jacketed head set into the ram of the press.

The operator places the comb in the bed or template of the press and brings the stamp down on the comb which forms the impression. The gold or bronze is stamped in by a second downward stroke of the press, great care being taken to prevent shifting of the comb between the first and second strokes. Sheet gold attached to thin paper is used for this purpose, or paper can be painted with bronze and cut into small sheets to facilitate handling. No heat is required when white pigments are used for stamping.

When combs are mis-stamped or double-stamped they can be salvaged by placing them on a steam table with the impressions on the underside. The heat from the table will soften the combs and draw out the impressions. Before re-stamping the combs should be repolished to remove all pigments and to freshen them. Combs should never be polished after stamping as the buff would wipe out the gold or pigment.

Schaphorst's CHATS *with the* ENGINEER

By W. F. SCHAPHORST, M.E.

MUCH is yet to be learned about rubber as well as all other belting. Many books have been published on the subject but they are only the beginning of what is to come. They are all decidedly incomplete.

For example, have you ever heard anybody talk about "Nature's great idler pulley?" I think not.

Hundreds and thousands of belts are being operated in this country, in Europe, and on other continents with a slackness that apparently defies that theorists' scare-phrase — "centrifugal tension." The theorist says, "No, you can't run a belt slack at so high a speed because centrifugal force will throw the belt off the pulleys." Yet, in spite of the wisdom of the theorist, belts continue to run slack at high speeds.

Belt men have noticed that on high speed idler drives the idlers can be removed without interfering with the good operation of the belt. But they remove the idler only temporarily for fear the belt might fail to continue its inexplicable performance.

The theorists have apparently forgotten that the slack side of the belt rotates around an "invisible center" and that the same centrifugal laws govern the belt there as when on the pulleys themselves.

When a cowboy whirls his lariat, centrifugal force opens it and gives it the form of a circle. The centrifugal stresses in the lariat are exactly the same as they would be on a pulley of the same diameter as the circle and rotating at the speed of the lariat. The exact stress of the lariat, whether made of horse hair, manila rope, or rawhide, could be easily computed. And the speed that will burst the lariat can be computed.

Centrifugal Tension Always Present

Therefore for exactly the same reason, a centrifugal tension is created in the slack side of any moving belt. It doesn't matter how slack or how tight the belt may be, as long as it is curved the least bit this centrifugal tension will exist, and what is more important, this tension is the same *everywhere* in the belt at any given speed.

On the tight side, of course, is another invisible idler, but that one tends to pull the belt *off* the pulleys. However, the working tension won't permit it to be pulled off. Everything is nicely counterbalanced all around, top and bottom.

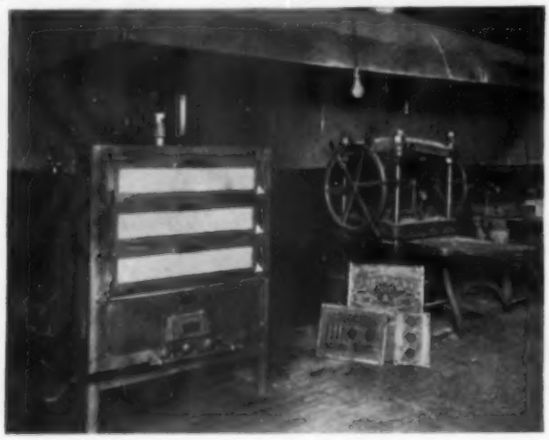
This, then, from the writer's viewpoint, helps to explain why so many belts are running nice and slack at a high speed. It is advantageous, of course, to allow considerable distance between shaft centers for then the weight of the belt assists the invisible idler.

Where an idler pulley is deemed necessary to stop belt flapping, wobbling, etc., or to give the belt greater wrap around the small pulley, it is plain that the idler shouldn't be used as a "tightener" or for the purpose of overcoming the centrifugal tension. The centrifugal tension in a belt automatically takes care of itself. An idler should be used merely as a "belt wrapper."

Oven Heat in Rubber Stamp Manufacture

A NEW method of drying the plaster molds in making rubber stamps has been adopted by the Acme Stamp Company of Boston, with good results, according to a special article in the November issue of *Industrial Gas.*

As is well known, it is necessary in making rubber stamps to dry the plaster molds "bone dry" after the type or design



Gas Heated Oven for Use in Drying Stamp Molds

has been impressed into them and before the unvulcanized rubber is applied. In the past, the method in most general use has been a so-called "direct flame" method where a gas flame was applied more or less directly to the base of the mold. This meant a lack of accurate heat control which was frequently responsible for uneven drying and a resulting "blowing up" of the mold, meaning its total loss as well as inconvenience to customers.

In an effort to overcome this hazard the Acme Stamp Company experimented with gas heated ovens controlled by thermostats. The results were entirely satisfactory and the company is now operating with the new equipment. The best operating temperature, which happens to be 210 deg. F., is constantly maintained in the ovens, giving uniform and speedy drying. Where the "direct flame" method took from five to fifteen hours, according to the size of the mold, drying is now accomplished in from two and one-half to six hours, and spoilage through uneven heat has been eliminated.

Rubber Reclaiming in Britain

SEVEN companies are now engaged exclusively in the reclamation of rubber in Great Britain and some others are producing ground waste and hard rubber dust, the American commercial attache at London states in a recent report. Four or five other companies also operate reclaiming plants in the production of reclaims for their own use.

The productive capacity of all the British reclaimers is estimated at between 9,000 and 10,000 long tons annually, and the present actual production is estimated to be between 5,500 and 6,500 long tons, two-thirds of which is consumed in the United Kingdom and the balance exported, principally to Europe.

Reclaimed rubber is chiefly used by manufacturers of bicycle and motor cycle tires, perambulator tires; proofings for waterproof clothes, footwear, mechanical rubber goods, and, to a lesser degree, in automobile tires and inner tubes.

With British rubber consumption approximating 40,000 long tons annually, the proportion of reclaimed to new rubber consumed is small compared with similar figures for the United States. No locally made second-quality tires have established themselves in the British market; hence the limited use of reclaimed rubber for this purpose. Nevertheless, there is a great deal of interest in the subject of reclaimed rubber; extensive research work is being undertaken by all the leading rubber manufacturers, and there is a steady increase in its use in the United Kingdom.

CARBON BLACK STOCKS DECLINE

Although the stocks of carbon black in the hands of manufacturers at the beginning of 1928, according to an estimate of Godfrey L. Cabot, Inc., represent only a four months supply, whereas stocks covered seven months requirements on January 1, 1927, carbon black prices have not advanced.

Stocks in the hands of manufacturers at the beginning of 1927 were 108,378,101 pounds. The actual volume of stocks on hand January 1, 1928, is not yet known.

The consumption of carbon black in 1927 was probably greater than in any previous year but actual figures will not be available for some time. Leaders in the trade estimate that the consumption will probably show an advance of 25 per cent over 1926. The production during the year also increased but not in the same ratio as the advance in consumption.

The increase in stocks in 1926, which amounted to 12,354,653 pounds, was accompanied by a decline in price on ordinary grades in carload lots from 8 cents to 6½ cents f. o. b. works, in the latter part of the year.

That the decreases in stocks in 1927 has not been accompanied by a corresponding advance in prices can be explained by the large construction program of such producers as Godfrey L. Cabot, Inc. The new plant of this company at Skellytown, Texas, is now in operation with an initial capacity of 25,000 pounds daily which can be readily increased to 60,000 pounds.

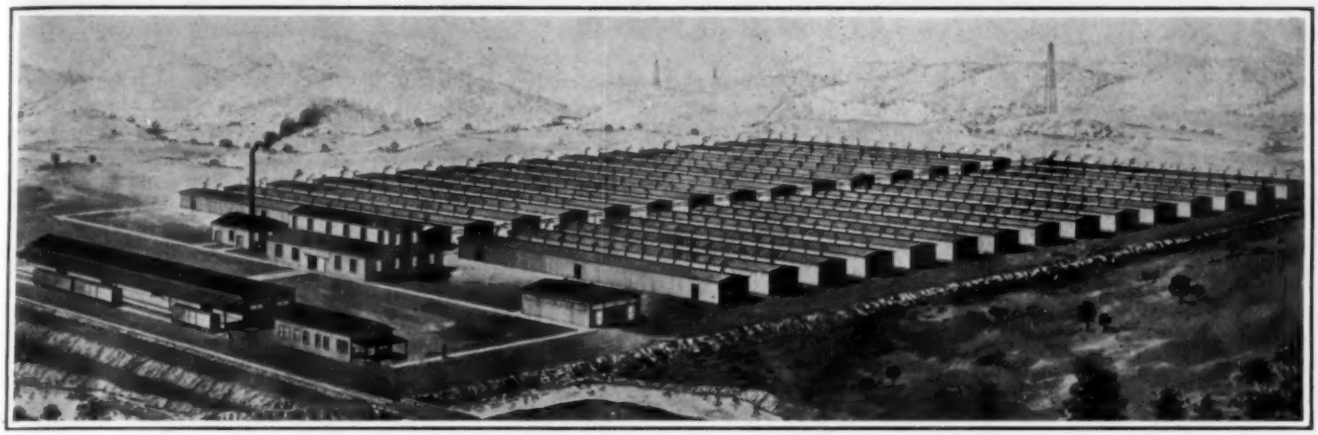
Oil Filled Electric Cable

A new kind of cable for long distance transmission of electric power was recently described before a meeting of the American Institute of Electrical Engineers in Chicago. In the center of the cable is a hollow core, about three-quarters of an inch in diameter, which is filled with insulating oil. The section of this cable in use is twelve miles long and is operated under a pressure of 132,000 volts and carries approximately 125,000 horsepower. This is said to be twice the highest pressure ever attained and three times the greatest amount of energy ever transmitted through an underground cable in the history of electrical engineering.

The oil in the center of this new cable is maintained under a pressure of about forty pounds so that it completely fills all spaces between the strands inside the sheathing. Air gaps are eliminated and any injury to a cable can be readily located by the leakage.

German Tire Industry

The operations of the tire industry of Germany in 1926 was the subject of recent study by the American Trade Commissioner in Berlin. Figures for 1927 are not yet available. In 1926 the number of German tire plants was reduced from 33 to 24, unfavorable economic conditions having forced many small plants to give up the production of tires. Twelve of the plants were located in Prussia. Employees during the year averaged a little over 7,000. The production of automobile casings amounted to 818,000 and automobile inner tubes to 756,192. The output of bicycle tires and tubes reached almost 10,000,000 each. Incomplete statistics, however, indicate Germany's consumption of crude rubber materially increased during 1927 as the industry has been active in the manufacture of mechanical rubber goods.



Typical Single Unit Carbon Black Plant

Factors in the Production of CARBON BLACK

Manufacture Must Be Confined to Localities Where an Economic Supply of Natural Gas is Available in Huge Volume—Modern Plants Represent Large Investment

By **H. W. Huber**
Vice-President, J. M. Huber, Inc.

ALTHOUGH carbon black is an essential compounding ingredient in most rubber products, particularly in tires, comparatively few of the consumers have had much opportunity to become familiar with the conditions required to produce it, as the entire production is confined to the remote large gas fields of the United States.

It is well known that carbon black is produced from burning natural gas in a limited supply of air, and collecting the resulting soot by impingement on a cooler steel surface. The pigment owes its remarkable re-enforcing properties to its extremely fine state of particle subdivision and to the serrated shape of these particles.

Burning conditions must be carefully controlled to maintain these two characteristics at their maximum if the material is to give satisfactory results in rubber products. Variation may be caused by non-uniformity of the gas itself, which is practically impossible to detect, or it may be caused by atmospheric changes which result in too little or too much air being supplied to the burning houses. Some of the more modern factories are controlled by the simple but positive method of maintaining a uniform carbon dioxide percentage in the exhaust gases as indicated continuously by a recording CO_2 meter. As long as this percentage is kept constant, variations in gas or weather are automatically compensated.

Based on today's market prices for carbon black, the producer nets less than three cents per 1,000 cubic feet of gas consumed. It can be readily seen that carbon black factories must be located in isolated regions where there can be no demand for gas for industrial or domestic purposes. The industry has necessarily migrated from state to state, as civilization and industry have grown nearer to the once remote districts. It is only five or six years ago that West Virginia ranked as one of the leading producing states. Today the industry is practically eliminated there and the natural gas commands a price in the neighborhood of twenty-five cents per 1,000 cubic feet at the wells. Kentucky has also seen a fair amount of carbon black production in the past but the gas is now diverted to pipe lines for industrial purposes.

For the past few years Louisiana, with its enormous natural gas resources, has been the leading carbon black producer. Recently, however, pipe lines have been completed which are bidding higher prices for the gas, thereby discouraging its use for black manufacture. Still more important pipe line projects are well under way and it is almost inevitable that the history of the industry in West Virginia and Kentucky will soon be repeated in Louisiana.

Fortunately there is still an abundant supply of cheap gas available in Texas. Many of the Louisiana producers have already removed their factories and it is only a matter of a short time before Texas will outrank Louisiana as the leading producer. While the present supply of gas in Texas is more than ample for present needs, the state is developing very rapidly and sooner or later carbon black production will doubtless be confined to the far western states where population is sparse and no incentive exists for the establishment of industry. There are numerous gas fields in the states of Wyoming, Montana, Utah and Colorado and some of these are already being utilized for carbon black by the leading producers, who realize the prime importance of geographical diversity.

It seems strange to many that carbon black has never been produced in any quantity outside of the U. S. A. Plans have been frequently projected for erection of plants in other countries but few have materialized. There are isolated natural gas fields in such countries as Russia, Roumania, Poland and Argentina but these have been

either too small for successful exploitation or so remote from rail-heads as to put consuming countries out of economical reach.

A carbon black unit can be built to burn as little as three or four million cubic feet per day but the operation does not become commercially feasible until at least double this quantity of gas is handled. Even this would represent a very small plant, incapable of supporting the proper technical staff for careful supervision. In America the chief producers operate a number of such plants under one general staff and the large volume of production permits maintaining the very extensive laboratory and research facilities necessary to insure uniform quality.

Few people realize the investment required to build even a small carbon black plant, or the magnitude of construction. In Wyoming, for instance, the largest single unit plant in the world was recently completed at a cost in excess of $400,000. This plant consists of 50 burning houses, each 150 feet long, built of structural steel and sheet iron, set on concrete foundations. These burning houses alone cover 7½ acres of ground. They contain 14 miles of depositing channels, with 250,000 burning tips. Yet this is not a comparatively operation, since many plants contain as many as twelve units, although not as large as the one described.

Carbon black was first used in any considerable quantity in the rubber industry in 1915, and has seen a rapidly expanding demand ever since. It has never been approached by any other compounding pigment in the degree of re-enforcing produced in wear-resisting rubber products, and aside from this, its low cost and low specific gravity have kept it far ahead of all other similar materials from standpoint of economy.

The market price has fluctuated violently from time to time in the past owing to speculative interests entering the industry and causing heavy over-production. During the past two or three years, however, the production has gradually centered, through mergers and otherwise, into the hands of a few strong producers who are capable of maintaining a high standard of quality at a low production cost. At the present time production and consumption are fairly well balanced and are likely to continue so. The industry is still carrying fairly heavy stocks accumulated during periods of overproduction and this fact has kept the price at a level which is very close to cost of production.

Dunlop Rubber Plantations

DUNLOP PLANTATIONS, LTD., the rubber-growing subsidiary of the Dunlop Rubber Company, of Great Britain, is about to make an issue of £2,500,000 ($12,500,000) six per cent cumulative preference shares at par. The dividend on the shares will be guaranteed by the Dunlop Rubber Company, the earnings of which will cover the dividend several times over.

The plantation company owns an immense area, and its output is approximately 16,600,000 pounds annually, which is unusually large, being greatly in excess of the output of any group of rubber estates in the British Empire. At the end of 1926 the company had a total area in bearing of 45,801 acres, and during that year the clearing and planting of the reserve area of 11,500 acres was commenced and the bulk of the work completed.

The estates comprise over 67,000 acres in Malacca, Negri, Sembilan, and Johore, of which 6,249 acres represent buildings, factory site, reserves, etc. All the properties stand in the company's books at under £50 per acre. Calculating the value per planted acre on the basis of the quoted shares of other plantation companies similarly located the value of the undertaking would be over £6,000,000 ($30,000,000).

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Experiments in Rubber Culture in the Americas

Department of Agriculture Reports on the Numerous Tests It Has Underway Looking to the Establishment of Plantations in the U. S. A. or the American Tropics

THE Bureau of Plant Industry of the U. S. Department of Agriculture which has in charge the effort to develop rubber culture in the continental United States and to promote such culture in the American tropics has made public the following formal report of their activities during the last fiscal year:

Cultural Characters

The investigations of rubber-production possibilities in the United States are being based on a new principle or method of procedure as affording a better approach to the practical problems. Attention is given first to the cultural characters of the plants to determine which species are best adapted for our conditions, vigorous in growth, and readily propagated in large quantities. The cultural characters can be learned more readily and the more intensive and expensive investigations of special processes of extraction and utilization of the rubber or of by-products can be limited to the more promising species. Since the agricultural possibilities of a plant do not depend upon its abundance in the wild state, the investigation of agricultural possibilities should not be restricted to the species that have been considered in the past as commercial sources of rubber. This economy of effort is required on account of the large number of plants that are now known to produce rubber, which runs into hundreds of species. All of the available species are being tested under different conditions in southern California and southern Florida, and the more hardy species are also to be tested in other districts—in Arizona, New Mexico, Texas, and South Carolina.

Hevea in Haiti

Tapping experiments with Hevea rubber trees in Haiti have been continued since 1924 and are now entering the third year. The yields of rubber continue to be comparable with those of the East Indian plantations and afford the best evidence obtainable regarding the possibilities of producing rubber in the West Indies or under similar conditions in Central America and Mexico. The location in Haiti is near the north coast, in a latitude of nearly 20°, or much farther north than any other Hevea trees that have been tapped continuously in tropical America. It is to be expected that equally favorable conditions may be found in many districts of the West Indies as well as in Mexico and Central America.

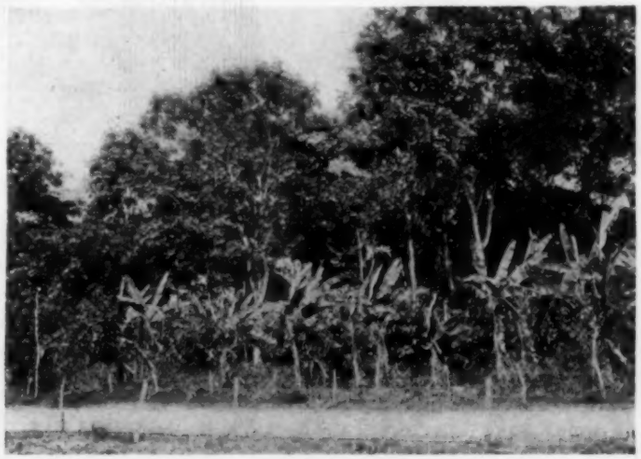
African Rubber Trees in Florida

Two kinds of African rubber trees, Funtumia and Mascarenhasia, are included in the experimental plantings in southern Florida, and the seedlings have survived the winters of 1925 and 1926 in thriving condition. The growth of Mascarenhasia was not interrupted during the cool weather, and the plants began to flower and fruit in the second season. Both kinds of trees are rather handsome, with lustrous elliptical leaves, not unlike coffee, but attaining a larger size. It is possible that these trees may prove useful in southern Florida for ornamental planting, which would facilitate the investigation of their rubber-producing possibilities, as in the case of Cryptostegia.

Madagascar Rubber Vines

Two species of rubber-producing vines of the genus Cryptostegia from Madagascar have been planted as ornamentals in many localities in southern Florida and are now attracting attention as possible sources of rubber. It is known that rubber of good quality can be extracted by a grinding process like that applied to guayule. The proportion is much smaller than in guayule but the vines grow

Buildings Used by the U. S. Department of Agriculture in the Tapping Experiments in Haiti. Latex is Coagulated and Records are Kept in Structure to the Left; on the Right is the Smokehouse



Hevea in Northern Haiti Where the U. S. Department of Agriculture is Conducting Tapping Experiments. Banana Plants in the Foreground

more rapidly. The planting of Cryptostegia as an ornamental will provide material and facilitate the investigation of its rubber-producing possibilities.

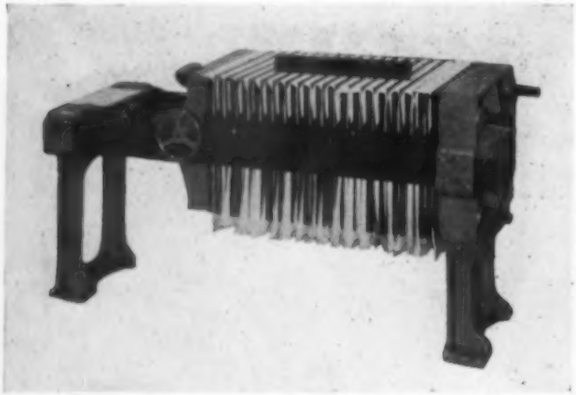
The seedlings grow rapidly, often attaining a height of 2 or 3 feet and beginning to flower in the first season. One species (*Cryptostegia madagascariensis*) forms a spreading bush 5 or 6 feet high, with a rather flat top, or more compact and rounded when trimmed. The other species (*C. grandiflora*) is more vigorous and has a stronger tendency to climb or to trail over fences and gateways. The rubber vines showed little damage from the hurricanes of 1926, while many other ornamentals were ruined. Experiments in southern California have shown that both of the rubber vines can be grown there and that they thrive better under the dry conditions of the interior "desert" valleys than in the cooler climate of the coast belt.

Filter Press Plates and Frames Now Made of Rubber

THE construction of filter press plates and frames of rubber, in order to overcome the disadvantages of wooden plates and frames when corrosive materials are being filtered, has been successfully accomplished by T. Shriver & Company, filter press manufacturers of Harrison, N. J., working in conjunction with the B. F. Goodrich Co. Many of the presses fitted with rubber plates and frames are already in use and sample presses which were exhibited at the Chemical Exposition this year aroused much interest. A photograph of one of the presses appears herewith.

The plates and frames of a press in which corrosive materials are filtered must not only be resistant to the corrosive action but must be durable, light and inexpensive. Long life and low maintenance cost are requisite. Furthermore, a tight seal must be secured between plates and frames. Rubber was found to meet all these conditions, the chief limiting factor being that of temperature. At high temperatures and concentrations some acids and other chemicals destroy the rubber parts, although they can be safely handled at lower temperatures.

The rubber plates and frames have been made of what the companies term semi-hard rubber, the middle ground between hard and soft rubber being chosen to secure greater resistance to corrosion shown by hard rubber, and the



freedom from breakage which soft rubber possesses. Their design follows that of the wooden plates and frames.

The soft contacting areas between the rubber plates and frames make a perfect seal, thereby eliminating leakage. The use of rubber lined pipes through the press head, rubber lined plates against the press head and follower and rubber lined valves makes the press truly corrosion-proof against most materials. The manufacturer may be consulted concerning the ability of the rubber plates and frames to resist certain concentrations and temperatures.

November Rim Output Drops Sharply

THE November report of the Tire and Rim Association of America shows a sharp decline in the number of rims inspected and approved during the month, as compared with the already low figure of October, 1927. The total was also almost 500,000 below the total of November a year ago.

Rim Size	Nov. No.	1927 %	11 Mos. No.	1927 %
Motorcycle				
28x2½	—	—	755	—
24x3	460	0.1	36287	0.2
26x3	294	0.0	41261	0.2
28x3	—	—	5489	0.0
Total	754	0.1	83792	0.4
Clinchers				
30x3	—	—	—	—
30x3½	78605	9.4	1137661	6.0
31x4	2500	0.3	18472	0.1
Total	81105	9.7	1156133	6.1
18" Balloon				
25x3½-18	—	—	217	0.0
26x4 -18	45286	5.4	759656	4.0
27x4½-18	768	0.1	44275	0.2
28x5 -18	—	—	276	0.0
Total	46054	5.5	804424	4.2
19" Balloon				
26x3½-19	34086	4.1	571283	3.0
27x4 -19	64977	7.7	958675	5.5
28x4½-19	35259	3.2	432863	2.3
29x5 -19	61	0.0	1785	0.0
Total	134383	15.0	1964606	10.8
20" Balloon				
27x3½-20	25468	3.0	327679	1.7
28x4 -20	68455	8.2	2685203	14.2
29x4½20	28660	3.4	401630	2.1
30x5 -20	36398	4.3	382158	2.0
32x6 -20	14945	1.8	63326	0.3
Total	173926	20.7	3859996	20.3
21" Balloon				
28 3½121	44809	5.3	5510077	29.2
2.75-21-D	16715	2.0	16715	0.1
29x4 -21	95178	12.4	1802226	9.6
30x4½-21	52380	6.3	1113232	5.9
31x5 -21	1999	0.2	111977	0.6
33x6 -21	2215	0.3	42641	0.2
Total	213296	26.5	8596868	45.6

Rim Size	Nov. No.	1927 %	11 Mos. No.	1927 %
22" Balloon				
29x3½-22	—	—	404	0.0
30x4 -22	—	—	8484	0.0
31x4½-22	802	0.1	9339	0.0
Total	802	0.1	18227	0.0
High Pressure				
30x3½-23	14677	1.7	109150	0.6
31x4 -23	—	—	6109	0.0
32x4½-23	16374	1.9	177286	0.9
32x4 -24	11284	1.5	154172	0.8
33x4½-24	—	—	2176	0.0
32x3½-25	3528	0.4	14997	0.1
33x4 -25	300	0.0	7274	0.0
34x4½-25	4179	0.5	23162	0.1
34x4 -26	—	—	—	—
Total	50342	6.0	494326	2.5
20" Truck				
30x5-20	92774	11.1	1435417	7.6
32x6-20	28955	3.5	259237	1.4
34x7-20	7723	0.9	71733	0.4
36x8-20	206	0.0	18214	0.1
40x10-20	154	0.0	1292	0.0
Total	129812	15.5	1785893	9.5
22" Truck				
36x7-22	—	—	1872	0.0
38x8-22	—	—	30	0.0
Total	—	—	1902	0.0
24" Truck				
34x5-24	3950	0.5	36601	0.2
36x6-24	1754	0.2	41487	0.2
38x7-24	2019	0.2	20135	0.1
40x8-24	394	0.0	12705	0.1
44x10-24	—	—	539	0.0
Total	8117	0.9	111467	0.6
GRAND TOTAL	838,591		18877634	

10 YEARS AGO

Items Reprinted from January 10, 1918, issue of The Rubber Age

At the present time many rubber factories are experiencing difficulty in maintaining their rate of output on account of the shortage of fuel and some of them have been obliged to close down altogether.

* * *

Crude rubber is plentiful and chemicals and compounding materials can be had in sufficient quantities, but the fabric situation is not so easy, especially in the case of manufacturers of mechanical goods.

* * *

That the coal situation in Akron is still acute is evidenced by the fact that the Northern Ohio Traction and Light Company has been forced to notify nearly 600 industrial establishments that electricity for power purposes must be discontinued. However, the Goodrich, Firestone, Goodyear and Miller rubber plants will not be affected as these companies have coal of their own and are loaning it to the power company.

* * *

The United States Rubber Company reports war orders totaling nearly $5,000,000.

* * *

Three weeks ago first latex pale crepe was held at 55 cents per pound, but at the close today 58 cents was the prevailing quotation for spot rubber.

* * *

On the menu of the eighteenth anniversary banquet of the Rubber Association, held January 7, the interesting notation is found printed opposite the dessert—*Charles Heidsieck Extra Dry.*

THE GENTLEMAN FROM MINCING LANE
reports current opinion in London's famous rubber market in every issue of THE RUBBER AGE

The London Letter

The Gentleman Talks About a Squeeze in Tires

LONDON, 29th December, 1927.

IN my letter of a fortnight ago I was ruminating on the outlook for a Merry Christmas and a Happier New Year for our friends, the tappers of white sap in Malaya and Ceylon. The conclusion I reached was that 1928 was not going to be so bad for them. I am sorry to have to report, as a result of a conversation with a friend involved in the readjustment now going forward in the British tire trade, that the outlook is not so pleasant for many of the good fellows who have worked "jolly hard" building up the production and trade in rubber tires in Britain.

Of course the duty of 33 1/3 per cent recently imposed on imported automobile tires was sure to spoil the jobs of a number of distributors of such goods. More and more exporters to this market are said to be toying with the idea that it might pay to install plants here to manufacture their tires for the British Empire markets. This possibility has not added any to the new year's outlook of the employees of the importers although they can assume the worst.

No one knows exactly what is going to happen to the small British tire manufacturer but we can conjecture a bit on it. Assume that there were 3,000,000 automobile tires, worth £9,000,000, made available for this market in 1927 by manufacturers and importers combined. Again, let's guess that Dunlop, Michelin and Goodyear control 92 per cent of the market. If this is right, and the figures *are* approximately correct, consider what a small share falls to the other 17 suppliers. About £40,000 is what it averages! Much of this marginal business comes from small British plants making every sort of rubber product in the same factory. Probably some of them make special tires, the sale of which can be maintained against all comers, but on the face of it, it is evident that without some such factor intervening, the fierce competition which looms up among the big fellows could suck into the maelstrom several of the small fellows without noticing them.

MICHELIN'S British plant is expected to get fully under way some time before summer and Goodyear is ready to start almost immediately. With Goodrich already inside, and their sales total annually gaining momentum—well, you can see what is coming. This market annually provides new business to the extent of about 20 per cent of the previous year but this doesn't seem enough to fill the order books of these big producers with their suddenly enlarged capacity.

The general impression here is that in the old days, when tires were imported free of duty, Dunlop, in a manner of speaking, held the big umbrella over their assorted lot of small competitors by keeping prices at levels remunerative to even the most inefficient. Dunlop enjoyed the lion's share of the market and was content to let the small manufacturers and the importers get a small share, preferring to have the latter keep their plants overseas. Now competition is both fierce and free and it will be interesting to see how some of the small plants manage to keep up the pace next summer.

A few days ago the British Goodrich Company, Ltd., held its third annual meeting. The chairman's speech revealed an improvement in the sales volume amounting to 100 per cent in some departments and an increase of 25 per cent for the whole. Tire sales in Great Britian had improved also, but still the trading profit fell from $150,000 to $90,000 in the past two years and net profits were not sufficient to pay even the preference dividend of $75,000.

"TO aggravate the situation," the speaker at the British Goodrich meeting said, "tire prices were reduced by foreign tire manufacturers to unremunerative levels." Yes, Michelin has usually taken the lead in determining price changes in the British market. The history of Michelin's operations since the war is an interesting one, particularily the last chapter or so. They were losing ground to Dunlop last year and had determined to build a plant. This plant would not be completed until early in 1928. Hence a full financial year from March to March intervened, and the possibility of a duty being imposed on imported tires was speculated on at length in London.

Whether Michelin had fore-knowledge or not, I do not know, but I do understand that they brought in large quantities of tires and that a number of warehouses were crammed full of Michelin stocks. It might be that they simply determined that regardless of the imposition of a duty, it would be worth their while to bring in their supplies for the year that would elapse before their British plant could be opened. If there were no duty imposed, they would simply have the tires available, and if the duty went on, so much the better. If the duty were imposed while Michelin was without a stock of tires in the country, they would have had to bring tires in, and possibly take a loss thereon, to maintain their place in the market pending the opening of their plant and the sale of their British-made tires in 1928.

At any rate, Michelin has not hesitated to cut prices to the point where other imported tires are certainly in dire straits. They are practically out of the market, except for special types. Despite the fact that the tire trade is not really my field and the above is based on the current gossip one hears here and there, the possibilities of a squeeze in British tire manufacturing in 1928 is an interesting one. It may be especially interesting to American companies who are contemplating the erection of plants over here and perhaps to those who are interested in crude rubber consumption in these Isles. Low prices for tires won't hamper their liberal consumption by British motorists, you know.

Yours faithfully,

THE GENTLEMAN FROM MINCING LANE.

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EDITORIAL COMMENT

The New Automobile Competition

THERE is ample evidence at the present moment that Mr. Ford did something more than introduce a new automobile when he recently brought out his Model "A" to replace the famous Model "T." His action was really the beginning of an interesting struggle within the automotive industry, a struggle which may well amount to industrial warfare, statements to the contrary notwithstanding. Other manufacturers of automobiles in approximate price classes have been quick to prepare for the battle, giving either more for the same money or cutting prices so that Mr. Ford will not have such an easy time of it with his new model as he did with his old one. At least one manufacturer has placed his prices practically on a parity with the Ford prices and the price of one model has been cut below that of the corresponding Ford.

While the replacement market for automboiles in the United States is now very large, it is not able, by a considerable margin, to take care of the entire capacity of the automotive industry. Manufacturers are finding it increasingly difficult to locate new buyers for the balance of their output. Automotive registration cannot continue to increase by such percentages as it has in the past. A slight falling off of prosperity might have the effect of keeping it almost stationary. It is not surprising that the manufacturers with large productions are hastening to solidify their positions. The manufacturers of light cars apparently have the best opportunity for continuing their growth.

The growth of the tire market will likewise be slower as more and more automobiles are sold for replacements and fewer and fewer to new buyers. The obvious effort of the tire manufacturers to solidify their positions also is probably based in part on recognition of this trend. The market for small tires will apparently be the one that will show the greatest growth in the next few years. This is a necessary consideration in judging future crude rubber requirements, particularly since a large proportion of the light cars will demand cheap tires.

The Era of Amalgamations

THE advent of the New Year has been marked by mergers in both the rubber plantation and rubber manufacturing fields. In both fields further mergers are to be expected although for different reasons.

The growth of the rubber manufacturing industry to its present proportions and in such a short time has been along the lines which might have been expected in any industrial field. In other words, leadership has been seized and maintained by a few companies. Although these companies are themselves well-known, the extent of their ascendency in the industry is not always realized. For instance, a recent survey of raw rubber consumption by American manufacturing companies developed the interesting fact that the five largest users were taking no less than 57 per cent of all the crude rubber being used in the country. The ten largest users were taking 70 per cent and the twenty largest users were taking 80 per cent. The smaller manufacturers, and they run into the hundreds, were dividing the remainder among them.

As time passes, it is reasonable to believe that more of the small manufacturers will find it advantageous to work together or to join with the larger manufacturers as branch plants as the need for such scattered production and distribution becomes more apparent. The keen fight for tire business, for instance, is apt to become more severe instead of relaxing.

In the rubber plantation end of the industry development has been along different lines as in fact most agricultural development has been. Small companies have predominated. There have been exponents of amalgamation of rubber plantation companies for many years but not even the stress of the low prices of 1920 and 1921 was sufficient to force many mergers. The economy which should result from amalgamations of this sort is clear. Now that the start has been made it would not be surprising if mergers in this field were numerous. The obstacles are chiefly artificial while the advantages should be great. Consolidations in the plantation industry would probably mean better marketing machinery and perhaps ease the elimination of restriction at some future date.

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Editor.....P. L. Palmerton
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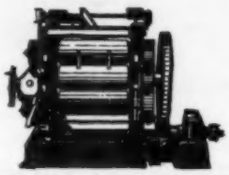
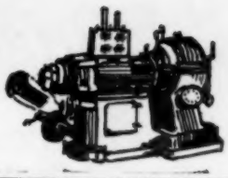


NEW EQUIPMENT *for* Rubber Factories



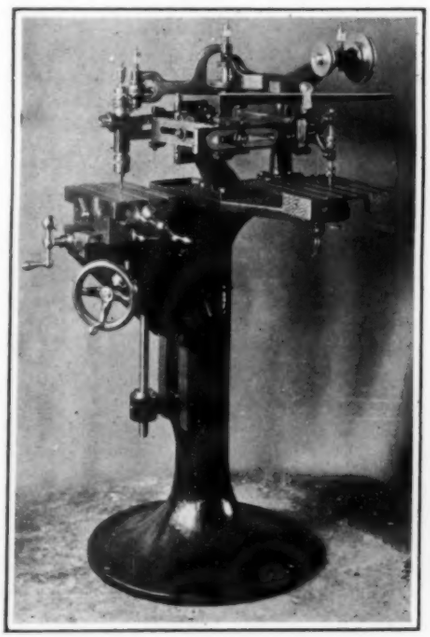
NEW "SIXTUS" ENGRAVING MACHINE MADE IN U. S. A.

The "Sixtus" engraving machine, which is adaptable for engraving rubber molds, is being offered in this country for the first time through the Engraving Machine Manufacturing Company, 1960 Broadway, New York City.

The chief features of the machine are the cutter of special design with the grinding fixture and wheel, the variety of attachments and the fact that the work table and the master guiding table are of the same level. The machine is built on a circular base or pedestal supporting the knee for the adjustable work table, the fixed guide table, the spindle drive mechanism and the pantograph. Drive is supplied by motor to the pulley at the upper right of the illustration. Three belts transmit the power to the spindle by means of a double-jointed arm, which prevents the motor vibration from reaching the spindle.

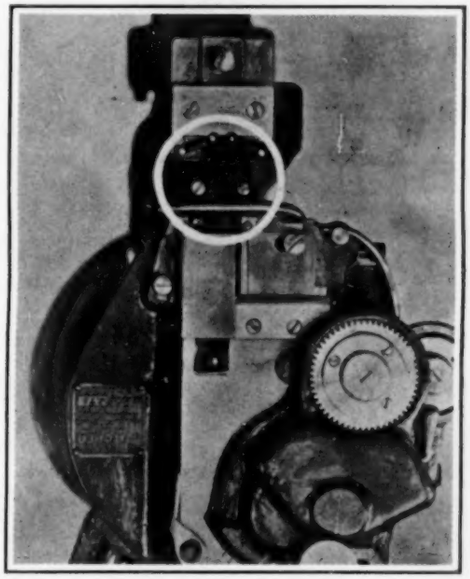
The cutter used has the usual 60-degree point, but its cross-section is semi-circular instead of only a 120-degree sector. The grinding fixture which is supplied can be clamped to the guide table, and the wheel, which has a beveled face, can be driven direct from the main drive by belt.

Ratios of reduction from 1 to 1 down to 1 to 15 are possible on the pantograph, which is securely supported at the fixed point.



"Sixtus" Engraving Machine

New Stitcher for Insulated Wire Beads

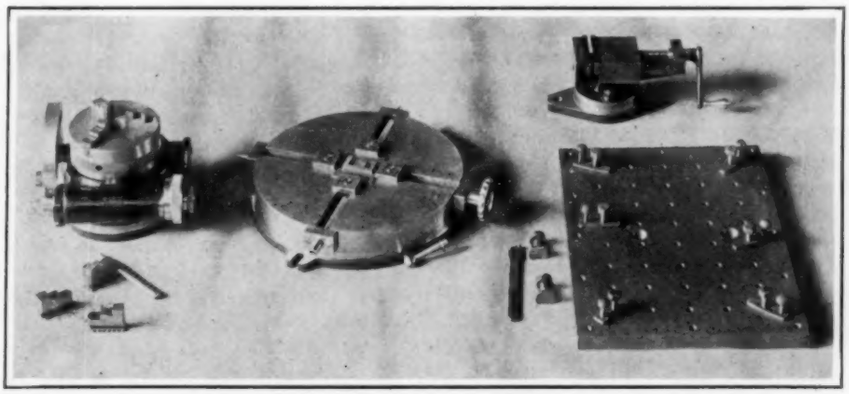


Above—Close-up of Head of Bliss Stitcher Showing Gripping Device Within White Circle

A MACHINE for use in stitching together the lap joints on wire beads of straight side tires has just been placed on the market by the H. R. Bliss Company, Inc., Niagara Falls, N. Y. The stitcher is very rigidly constructed, and is said to be the result of extensive development made by Bliss engineers in cooperation with one of the largest tire plants in the Middle West in which a number of these machines are now being used.

It is easily adapted to all thicknesses and widths of beads and has a capacity of 20 to 25 beads per minute. The stitching wire used is the regular flat bookbinders' wire. Cost of operation is said to be 10 cents per 1,000 beads.

The accompanying illustrations show the complete machine with a bead in position ready for stitching and a close-up of the machine head showing a cross-section of the lap joint of wire bead compressed and stapled. The gripping device shown within the white circle in the close-up view permits continuous stitching and clinching without removing the bead after each stitch is taken.



The Attachments Supplied With the Sixtus Engraving Machine

A Page of Timely Foreign Rubber News

LONDON RUBBER SHOW ATTRACTS INTEREST

Institution of the Rubber Industry Holds Interesting One-Day Show in London—Many New Articles of Rubber Manufacture Shown.

THE one-day exhibit of manufactured rubber goods, which was held on December 14 at Central Hall, Westminister, London, under the auspices of the Institution of the Rubber Industry, was attended by a large number of people and created considerable interest in rubber circles.

The president of the Institution, Lord Colwyn, opened the exposition and was supported in the ceremony by Sir Henry Wickham, the father of the plantation industry, Sir Stanley Bois, Chairman of the Rubber Growers' Association Propaganda Committee, F. W. Hinde, Chairman of the India Rubber Manufacturers' Association and others prominent in the industry.

The exhibition was arranged on modest lines. Instead of the usual elaborate booths, the goods were displayed on open benches and counters. Part of the space was set aside for the retail trade and a considerable volume of Christmas shopping was done in rubber goods.

The great variety of articles shown included the very latest developments in the manufacturing industry. The Imperial Chemical Industries, Ltd., showed their colors for latex and special dispersed colors for use in the electro-deposition of rubber. The British Goodrich Company, Ltd., showed cutless bearings.

Rubber tiles and floor matting held a conspicuous place in the exhibits as well as all classes of rubber footwear. "Vulpro" rubber sheeting, capes and hoods, all manufactured from vulcanized latex, according to a process patented by Dr. Schidrowitz, were exhibited by Vultex Products, Ltd.

ACTION IS DELAYED ON BRITISH RESEARCH BILL

Considerable disappointment is felt among members of the House of Commons in London and throughout the rubber industry in general at the fact that the Rubber Industry Bill is to fail of passage, at least until the next session of Parliament in February. When it was introduced in November there was every hope that it would pass without opposition, as it had the support of many leading members of all the political parties and of every trade association concerned.

The object of the bill is to meet the situation when the Government grant to the Research Association of British Rubber and Tire Manufacturers ends in 1929 by providing that thenceforth the necessary funds shall be raised by collecting one twenty-fifth of a penny on every pound of raw rubber that is used in Britain. As the bill was not introduced until the fall season, the only hope of securing its passage was as an agreed measure. This hope, however, has now been destroyed by a motion to table the proposition.

Mannikin at London Rubber Show Displaying Wellington Boots and Decorated Rubber Coat

FIRST TIRE PRODUCED AT BRITISH GOODYEAR

The first tire to be completed at the British plant of the Goodyear Tire and Rubber Company at Wolverhampton, England, was turned out on December 15 and plans are progressing satisfactorily toward an early production of 2,000 tires per day. Construction work on the new factory was only begun July 25, 1927, and the plant was constructed and the machinery installed in record time. Fifty men from the Goodyear organization at Akron sailed for England early in December to assist in getting the plant into full production as soon as possible. The new British plant makes the sixth Goodyear factory in the world now producing.

BRITISH GOODRICH CO. STRENGTHENS POSITION

Report at Third Annual Meeting Shows Assets in Excess of Liabilities to Be £268,409, as Against £62,869 Last Year—Company Buys Willett Works.

AT the third annual meeting of the British Goodrich Company, Ltd., recently held at the company's plant at Leyland, England, Sir Walrond Sinclair, the chairman and managing director, reported a net profit for the year of £5,856 as compared with £18,768 for the previous year. The net profit plus the amount brought forward totaled £13,793, which was £1,206 less than the requirements for preferred dividends. The strength of the company's position was far from unsatisfactory, however, and assets exceed liabilities by £268,409, whereas the excess last year was only £62,869.

During the year the requirements of the hose business over-taxed the capacity of the Leyland plant and steps were taken to acquire the hose department of the Willett Works, Ltd., at Fulham. The purchase has been completed and a new company to be known as the Willett Rubber Company, Ltd., has been formed with the British Goodrich Company subscribing in cash for a majority of the stock.

During the year the company suffered from the consequences of the general strike and the coal strike and was also forced to meet the competition from French tires which were put on the market at greatly reduced prices. The company's tire sales, however, exceeded by a substantial unit volume those of the previous year.

In other lines of rubber goods than tires, the company reported increased sales in all departments, particularly in belting, hose and general mechanical goods. Several large contracts have been secured for rubber component parts used in the manufacture of British automobiles. The overseas trade of the company also continued to show improvement.

British Overman Tire Co.

The formation of a new British company has been announced for the purpose of manufacturing the Overman cushion tire in England. It will be known as the British Overman Tire and Rubber Company, Ltd. The company is reported to be acquiring the manufacturing and selling rights for Great Britain, Australia, India, New Zealand, Egypt, South Africa and South America. It also plans to take over under lease the factory and equipment of the Midland Rubber Company, Ltd., of Birmingham. The secretary and registered office of the new company in London is given as 82 Victoria street, Westminster, S. W. I.

FINANCIAL NEWS

GENERAL TIRE REPORT SHOWS RECORD PROFITS

Net Earnings Total $2,524,325—Sales Gain 21½ Per Cent Over Last Year —Bank Loans Are Less Than Present Cash on Hand.

THE General Tire and Rubber Company, in its annual report for the year ended November 30, 1927, announces a net profit of $2,524,325 after deduction of all charges except Federal taxes. Net sales amounted to $23,692,500, a gain of approximately $4,000,000, or 21½ per cent over the preceding year. Of this gain 20½ per cent was made in pneumatic tires and the balance in cushion tires.

R. W. Gallagher, president of the East Ohio Gas Company, was elected as a director to succeed the late Michael O'Neil. All the other directors and officers of the company were re-elected.

W. O'Neil, president, in his report to stockholders, said: "This has been our biggest year in sales as well as profits. In percentage of gain it is second to but one other year in our history. In face of decreased sales throughout the industry, we have been able to make the greatest gain in tire sales of any company in the business. This is not only true of our unit gain, but also of our gain in dollars and cents.

Statement Vindicates Policy

"Our statement shows the vindication of the position we took several years ago—that we would not make second or third line tires, but would maintain our policy of one tire of the highest quality. Adhering to this policy, we have been able to show in 1927 a growth in units of 40 per cent as well as an increase in sales of over 21 per cent, while the best that has been announced so far in the rubber industry is an 18 per cent increase in units with less sales in dollars than a year ago. This total business was done exclusively on tires for our own exclusive dealer business.

"We are not committed on any raw material for future delivery at a higher price than the present market value. Of course, on crude rubber, the market has been lower and we are amply protected considerably below today's prices."

W. E. Fouse, vice-president, in presenting the treasurer's report, said:

"We are now paying a regular dividend on the common stock of 12 per cent, with an extra dividend of 8 per cent, which was paid to stockholders of record on December 20. In analyzing our current assets, there is shown on hand in the banks cash of $643,615, notes receivable $1,230,406, accounts receivable $3,037,093 and inventory of $3,128,234. Good will and patents are carried at $1. Our total bank loans are less than $600,000, or less tha our actual cash on hand. We have no bonded indebtedness of our own or subsidiary companies."

Rand Increases Capital

The Rand Rubber Company, Inc., 397 Sumner avenue, Brooklyn, N. Y., has filed a certificate in the office of the Secretary of State of the State of New York increasing its capitalization from $50,000 to $150,000.

The company has found a wide market for their etched rubber aprons, a product developed under their own patented process of printing upon rubber. This printing is done by an etching process and is capable of producing various beautiful effects. The capital derived from the sale of the new stock will be used in expanding this phase of the company's business and in the installation of new machinery and equipment to take care of the increased demand.

Hood Changes Fiscal Year

Stockholders of the Hood Rubber Company have voted to retire 1,500 shares of the company's 7 per cent preferred stock and have also acted favorably on the proposal to change the fiscal year to end December 31 instead of March 31. The date of the annual meeting was likewise changed to the third Thursday in February, when the annual report of the company will be made public.

Late Stock Prices

	Last Price		—1927—	
	Jan. 3	Dec. 17	High	Low
Ajax	12	10¾	13	7½
Firestone	225	189	228	117
do 6% pfd.	108¾	108	109	107
do. 7% pfd.	108¾	107½	107½	98½
Fisk	16⅝	16	20	14⅞
do 1st pfd.	91	90½	100	81
General	180	187	187	140
do. pfd.	103¼	106	110½	99¼
Goodrich	93½	94¼	96½	42¾
do. pfd.	110½	110½	111⅛	95
Goodyear Com.	67⅝	59⅝	69⅝	48⅜
do pr. pfd.	96	95⅜	118⅛	104½
do. pfd.	118	120	121	98½
Hood	43	43½	47	39
India	16½	15	30	15
Intercontinental	20½	21⅜	25⅛	11
Kelly Springfield	26	28½	32¼	9½
do 1st pfd.	78	76	97½	44
do 8% pfd.	78	82½	102	35
Lee	16⅛	16⅝	18½	7
Miller	27½	21⅝	36¾	18½
do pfd.	92	93½	104	99
Mohawk	20	24½	26	15
do pfd.	55	57	65	65
Seiberling	38¼	39	39½	21⅜
do pfd.	102	104	104	96
Star	2½	2½	2½	1½
U. S. Rubber	56¾	56½	67⅛	37¼
do pfd.	104	104	111⅝	85¾
U. S. Rubber Reclaiming	—	—	12	12
do pr. pfd.	—	—	24	24
do series A	—	—	15	15

KELLY-SPRINGFIELD NET PROFITS DROP

Tire Price Reductions and Charge-Offs Bring New Profits for Last Half of Year to Only $100,000—Company's Position Considered Satisfactory.

IN spite of the good showing reported by the Kelly-Springfield Tire Company at the end of the first six months of 1927, the net income for the year is not expected to be more than $1,000,000, according to a recent Dow, Jones & Co. analysis. The drop in earnings is attributed to tire price reductions and the usual year-end adjustments and charge-offs.

Kelly-Springfield reported net profits of $945,348 for the first six months of the year, equal after preferred dividend requirements to $1.78 per share on the outstanding common stock. On that basis and on the assumption that the earnings for the last half of the current year would keep pace with the first half, it had been expected that the net profits of the entire year would earn $3.50 per share. The company, however, is reported to have experienced a sharp falling off in earnings to a point where it is not expected to show much more than $100,000 net profits for the last six months.

Company's Position Satisfactory

In spite of this situation the position of the company is far from unsatisfactory, and the net profits for the year of approximately $1,000,000 will compare very favorably with the net loss in 1926 of $3,439,800. During the current year between $2,500,000 to $3,000,000 in loans has been paid off.

The company has outstanding $5,000,000 ten-year 8 per cent sinking fund gold notes of 1931, $2,950,000 6 per cent cumulative first preferred stock, $5,264,700 8 per cent cumulative second preferred stock, and $9,096,000 common stock ($25 par value). On October 1, 1927, accumulated dividends on the first preferred issue amounted to 21 per cent. Accumulations on the second preferred amounted to 30 per cent on November 15, 1927.

This heavy capital structure is doubtless a handicap to the company, but the possibility of working out a more advantageous refinancing scheme will probably have to wait until conditions warrant. It is understood that the directors of the company did not even discuss the matter at the last meeting in view of the present drop in profits, and it would seem likely that the company will turn its attention to first building up its earning power and liquidating further its bank loans.

U. S. RUBBER COMPANY ANNOUNCES A NEW TIRE

A new second line tire, to be known as the "Traxion Cord," has been announced by the U. S. Rubber Company. The new tire will be stocked in all the U. S. Rubber Company branches as fast as production will permit. The prices quoted for the 30x 3½ size is $4.25 and for the 29x4.40 size, $5.50, subject to 2 per cent cash discount and the usual dealer's bonus, but not subject to the special trade discount of 5 per cent, as in the case of other casings. The usual standard warranty will not apply nor will there be any protection given on prices.

Martin Tire and Rubber Sold

The Milwaukee Rubber Products Company, a new corporation capitalized at $100,000, has bought the Martin Tire and Rubber Company, of Milwaukee, and will resume operations at the plant at 4401 State street, Milwaukee. The plant acquired by the new concern comprises about 30,000 square feet and has a capacity for 400 tires per day. The line of rubber products which will be marketed by the new company consist of a solid industrial truck tire for trailers and air cushion tires such as are used on light delivery wagons.

New Plant Nears Completion

Very satisfactory progress is reported on the construction work on the new $4,000,000 California plant of the B. F. Goodrich Rubber Company, and it is expected to be ready for opening by April 1. It is understood that the company will announce very shortly the executives who will be in charge of the new unit. F. E. Titus is to be general sales manager and E. S. Sargeant, secretary and treasurer.

N. J. Tire Dealers Organize

The New Jersey Tire Dealers' Association have filed articles of incorporation under the laws of New Jersey, and will establish offices in Jersey City. The incorporators named are Samuel Bernhardt and Christine Smith, of Newark, and Jesse N. Graham, of Garwood, N. J.

New Exchange Members

The following have been admitted to membership on the Rubber Exchange of New York, according to announcement by Walter Dutton, secretary:

Aage Peter Bierrie, president of Bierrie & Co., Inc.; Robert B. McGaw, treasurer of the Fisk Rubber Company, and Bancroft W. Henderson, of Bancroft W. Henderson & Co., Inc., all of New York City.

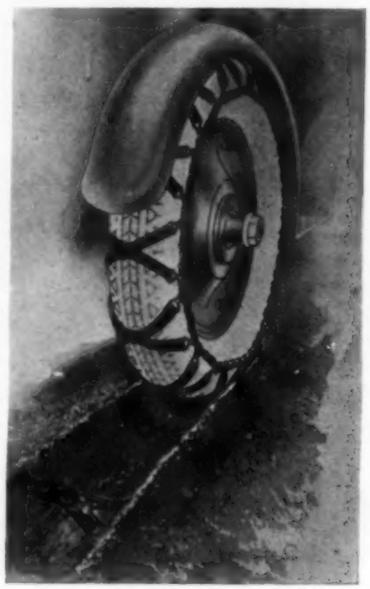
Exchange Seats Sell at $6,000

Another advance in the price of seats on the Rubber Exchange of New York was made December 21, when John L. Handy, of J. L. Handy, Inc., purchased, for the account of another, the membership of Charles J. Walter for $6,000. This represents an advance of $1,000 in the price of Exchange seats within the last month.

The following day a second seat was sold at the same figure, when Lewis D. Raabin, of H. Hentz & Co., sold an extra membership to John L. Handy for the account of another.

DEMAND INCREASING FOR RUBBER AUTO CHAINS

The Gates Rubber Company, of Denver, Colo., report that the success with which its new rubber chains has been greeted among the automobile accessory trade has been so great that the factory has been unable to meet the demand.



Gates Rubber Chain

The new Gates 4-Way Grip Rubber Chain, as shown in the accompanying photograph, is said to offer resistance to skidding in any direction by the X-shaped cross links which at the same time, by lying flat against the tire, do not cause any gouging or cutting into the rubber, as was often the case in the use of steel chains. The new device also eliminates the noise usually made by metal chains.

THREE BRITISH RUBBER PROJECTS FORM MERGER

First Large Consolidation of Rubber Estate Companies—Total Area Under Control Is 65,000 Acres—Links Two Powerful Plantation Groups.

A PLAN has recently been announced in London for the consolidation of the interests of the Amalgamated Rubber and General Estates and the Amalgamated (Rubber) Development Company, two large estate companies under the management of the Fairbairn group, with the United Serdang (Sumatra) Rubber Plantations, which is one of the leading companies in the extensive Harrisons & Crosfield group. The first two named companies will go into liquidation, but the Estates company may, prior thereto, declare a dividend of 10 per cent.

James Fairbairn will become vice-chairman and C. N. Radcliffe, a director of the two Amalgamated companies will join the board of the United Serdang Company.

The amalgamation is a direct result of efforts on the part of Mr. Fairbairn, who for some time has strongly advocated the consolidation of rubber companies and the merger is looked upon as the forerunner of what may be expected in the case of several other plantation groups. Rumors of further consolidations have been persistent for several months. Heretofore a few consolidations have been effected by small companies whose overhead expenses were obviously disproportionately heavy, but the present plan as regards the three companies above mentioned is the first important merger which has been consummated.

The United Serdang is already one of the biggest British companies. The combined area of the three companies involved in the merger will be in the neighborhood of 65,000 acres, of which a very large majority is already planted to rubber, and 16,000 acres of reserve land which is suitable for rubber growing. In size, therefore, it will rank second among the British growers, Dunlop Plantations being the largest single undertaking.

Another important feature of the consolidation is that it is not a merger of companies already under one control, but an alliance between the powerful Harrisons & Crosfield group, under the guidance of H. Eric Miller, and the Fairbairn group.

Closing Prices on Rubber Exchange of New York

DECEMBER 19 TO JANUARY 3, 1928

Date		Spot	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Sales*
Dec.	19	40.50	40.90	41.30	41.50	41.70	41.90	42.00	42.00	42.10	42.20	42.30	42.40	.....	524
	20	40.90	41.00	41.30	41.70	41.70	41.80	41.80	41.90	42.00	42.20	42.30	42.40	.....	482
	21	40.80	40.80	41.10	41.40	41.50	41.60	41.80	41.90	42.00	42.10	42.30	42.40	.....	218
	22	41.00	40.90	41.30	41.70	41.80	41.90	42.00	42.10	42.20	42.30	42.50	42.60	.....	168
	23	41.00	40.90	41.40	41.70	41.90	42.00	42.20	42.20	42.40	42.60	42.80	43.00	.....	62
	27	41.00	41.00	41.40	41.80	41.90	42.10	42.10	42.20	42.30	42.40	42.50	42.60	.....	43
	28	41.30	41.20	41.50	42.00	42.10	42.30	42.40	42.50	42.60	42.70	43.00	43.20	.....	114
	29	41.50	41.20	41.50	41.90	42.10	42.20	42.40	42.50	42.60	42.60	42.80	43.00	.....	129
	30	41.30	41.10	41.20	41.60	41.80	42.00	42.20	42.30	42.50	42.60	42.80	43.00	.....	181
	31	41.30	41.20	41.50	41.60	41.70	42.00	42.20	42.30	42.40	42.50	42.80	43.00	.....	19
Jan.	3	41.00	40.90	41.20	41.40	41.60	41.80	41.90	41.90	42.10	42.30	42.50	42.70	42.90	66

(*) In lots of 2½ tons each

— Names in the News —

NORMAN A. SHEPARD, director of chemical research at the Firestone Tire and Rubber Company, Akron, recently spoke before the graduate students of the chemistry departments of Yale University on the subject, "The Role of the Chemist in the Rubber Industry."

SIDNEY M. SCHOTT has severed his connections with the United States Rubber Company. He has been with the company for the past fifteen years in various capacities. At the time of his resignation he was secretary of the tire development department at the Detroit plant of the company.

WALTER LANDELLS has left the well-known British rubber brokerage firm of Zorn & Leigh-Hunt. It is understood that the partnership, so far as regards Mr. Landells, has been dissolved by mutual consent, but the remaining partners, D. F. L. ZORN and REGINALD W. JONES, will carry on the business under the same style as heretofore.

HAROLD STANLEY, who has recently joined the firm of J. P. Morgan & Co. as a partner, to take the place vacated by Dwight W. Morrow, will be one of the youngest men in the higher financial circles of the country. Mr. Stanley is only 42 years of age and a graduate of Yale of the class of '08. Among the several directorships which he holds is a prominent place on the board of the B. F. Goodrich Company.

J. F. JONES, general sales manager of the Mohawk Rubber Company, made an extensive trip to the Pacific Coast the latter part of November and the first part of December. While Mr. Jones' objective was the Los Angeles and San Francisco branches of his company, he conferred with distributors en route at Chicago, Omaha, Kansas City, Denver and Albuquerque.

WILLIAM E. DUCK, managing director of the Firestone Tire and Rubber Company of England, who spent the last two weeks of December at the parent company's plant at Akron, returned to England the first of the year. He reported that the demand for smaller cars was growing in Great Britain, due especially to the method of taxation whereby automobiles are assessed £1 per horsepower per year.

JOHN M. YOLTON has resigned from the aeronautical sales force of the Goodyear Tire & Rubber Company to enter private business in Texas. Mr. Yolton has gained a wide reputation in aeronautical circles as a balloon pilot and an expert in lighter-than-air craft. He has had thirteen years continuous service with the Goodyear organization.

HARVEY S. FIRESTONE, SR., celebrated his 59th birthday quietly at his winter home in Miami Beach, Fla., on December 20. He was born in Columbiana County, Ohio, in 1868, and has been at the head of the Firestone Tire and Rubber Company since its organization 27 years ago.

J. A. DUVAL recently resigned as plant superintendent of the F. S. Carr Company, Framingham, Mass., manufacturers of proofed goods. Mr. Duval has been connected with the Carr organization for the last 12 years, previous to which he was with the Hodgman Rubber Company, Tuckahoe, N. Y. He is well known throughout the industry as one of the best posted rubber men on the proofing of rubber goods. Mr. Duval has not as yet announced his future plans.

THE SEIBERLING SINGERS

Group photograph of the Seiberling Singers—a recent addition to radio programs sponsored by the Seiberling Rubber Company, Akron, Ohio—This radio hour was widely heralded throughout the country in large newspaper space and is a regular feature on the air every Tuesday night—Marshall Bartholomew is the leader of the male chorus

Christmas Activities at the Factories

THE Goodyear Tire and Rubber Company played Santa Claus to more than 10,000 children during Christmas week, staging the party at the Goodyear auditorium. All of the children were youngsters of Goodyear employees. So great was the number that Santa Claus had to be assisted by a group of 30 men, who constituted the committee in charge of arrangements. Gifts were distributed in front of a 40-foot Christmas tree, while a military band played Christmas carols.

Other activities included in the Christmas program of the Goodyear company was the distribution of gifts to the Children's Home and Children's Hospital. This was done with the modern reindeer team—the Goodyear pony blimp "Pilgrim"—which flew over the institution while Santa Claus dropped his gifts from the air.

* * *

The Firestone Tire and Rubber Company entertained the children of its employees with a Christmas frolic in the Firestone auditorium the evening of December 22, when candy, fruit and toys were distributed in conjunction with an evening of entertainment.

The office force of the Thermoid Rubber Company, Trenton, N. J., held their Christmas party at Hillwood Inn. About 100 were present. Dinner, dancing and cards were enjoyed. R. H. Temple was the general chairman.

* * *

The Murray Rubber Company, Trenton, N. J., held a Christmas party at its offices on December 22. Following a dinner, gifts were distributed to the guests. Charles C. Anderson was chairman of the affair.

* * *

The Trenton Tire Dealers' Association held its Christmas party at Hillwood Inn. P. W. Yates, president of the organization, arranged the party and officiated.

* * *

The officials and employees of the Pioneer Rubber Mills, San Francisco, Cal., gathered at the Commercial Club on Saturday, December 24, to hold their annual Christmas party. Vice-President D. D. Tripp welcomed the gathering. Luncheon was served during which a musical program was given. H. R. Mansfield, vice-president, mirthfully presented "phoney" gifts to each one present.

GOODYEAR INJUNCTION SUIT HEARING DELAYED

In addition to the suit against the Goodyear Tire and Rubber Company instigated by Kent P. Johnson, a minority stockholder, filed recently, to compel the company to pay back dividend on the common stock, and reported in THE RUBBER AGE of December 10, 1927, Mr. Johnson has now entered another petition in the Common Pleas Court of Cleveland for a mandatory injunction restraining the company from issuing the $60,000,000 in first mortgage bonds which were approved some time ago as part of the refinancing scheme of the company. At the hearing on December 28 the case has been postponed by agreement of counsel until February, when a permanent restraining order will be argued.

It is reported that more than 96 per cent of the old preferred stock of the Goodyear Tire and Rubber Company has already been presented for exchange for the new first preferred shares, according to the recently approved refinancing plan. Although the original exchange offer on the old stock expired November 30, the directors have voted to reopen the privilege on January 1.

Mason Company Suit Amended

Dismissal of that portion of the suit recently filed against the Mason Tire and Rubber Company, Kent, Ohio, asking for a receivership, has been ordered by the court on the agreement of the plaintiffs after an examination of the books of the company and in view of the fact that such action might seriously effect the credit position of the company. The rest of the suit will stand as originally filed on December 8. An amended petition will be filed immediately. The case was previously reported in THE RUBBER AGE of December 25, 1927.

National Tire Reorganizes

As a result of the reorganization effected by the recent action of the stockholders of the National Tire and Rubber Company, of East Palestine, Ohio, C. L. Merwin has succeeded John Morgan as president of the company. Several other changes in the executive personnel have also been made. The position of vice-president and controller has been created for C. W. Helman. The sales manager and vice-president is C. E. Milley. C. W. McComb is vice-president and factory superintendent. R. B. Taggart will be treasurer and L. M. Kyes is secretary. Mr. McComb has also been elected to the company's board of directors. Reports made at the recent stockholders' meeting indicate a satisfactory condition within the company, with the plant working at full capacity and a good volume of business in prospect.

GROUND BROKEN FOR NEW FIRESTONE PLANT

The construction of the new Los Angeles plant of the Firestone Tire and Rubber Company got under way on December 15 when Russell Firestone, the youngest son of Harvey S. Firestone, Sr., turned up the first shovelful of earth at the site of the new factory in the presence of a large gathering of company and city officials. The ceremony followed a luncheon at the Chamber of Commerce. The new plant calls for an expenditure of $7,000,000. It is expected that at the start of operations the daily output will approximate 5,000 tires and 7,000 tubes.

Starts Aeronautic Classes

The Industrial University of the Goodyear Tire and Rubber Company at Akron, has inaugurated a course in aeronautics embracing all the work usually given in a "ground school" and including practical flying in the Goodyear blimp "Pilgrim." This is the first time that such a course has been given in an industrial school. The faculty will be comprised of the aeronautical engineers and pilots from the staff of the Goodyear-Zeppelin Corporation.

Miller Rubber to Build

The Miller Rubber Company announces that they have acquired by purchase 19,500 square feet of land adjoining railroad connections on Brookline avenue, Boston, at the corner of Fullerton street, where they will erect a three-story building. The new property will become the company's headquarters for that section of New England. The land adjoins the Sears-Roebuck property and is on the opposite corner from the newly-erected building of the Firestone Tire and Rubber Company.

Small Fire at Trump

A fire, thought to have started by spontaneous combustion in the boiler room of the Trump Rubber Company, Akron, on December 21, caused damage to the extent of approximately $3,000, but was checked before it could spread beyond the wall and roof at one end of the building. According to officials of the company, the loss was entirely covered by insurance.

GENERAL RUBBER STOCK RESTORED ON EXCHANGE

Following the spectacular movement of the common stock of the General Tire and Rubber Company on the Cleveland Stock Exchange on December 20, and the suspension of all trading in the stock by order of the Exchange governing committee, the stock was restored to the floor on December 22, after an investigation which totally exonerated the officials of the company of any transactions connected with the violent drop in the stock on December 16. The extremely bearish trading at that time was found to have been done on behalf of individual stockholders, and was largely due to the error on the ticker, which gave the impression that William O'Neil, president of the company had died suddenly. The death reported at the time was that of Michael O'Neil, father of the company's president.

George L. Dunham

George L. Dunham, president of Dunham Brothers Company, and one of the largest distributors of rubber footwear in the shoe trade of the United States, died on December 11, at his home at Brattleboro, Vt. For several years Mr. Dunham was president of the New England Shoe Wholesalers' Association and was also prominent in local politics. Together with his brother, the late Charles W. Dunham, he established a boot and shoe business in 1885 which has grown since to a volume of approximately $4,000,000 yearly.

Raymond C. Pitcher

Raymond C. Pitcher, son of the general manager of the Easthampton Rubber Thread Company, died on December 26 at the Dickinson Hospital, Northampton, Mass., from burns received two weeks before while working in the vulcanizing department of the mill of which his father is manager. Mr. Pitcher and another employee, Joseph Tatro, were scalded by steam when they opened a vulcanizer. Tatro is reported as recovering.

CATALPO!

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SOLE PRODUCERS OF PURE **ASBESTINE** SPECIALLY PREPARED FOR USE IN RUBBER
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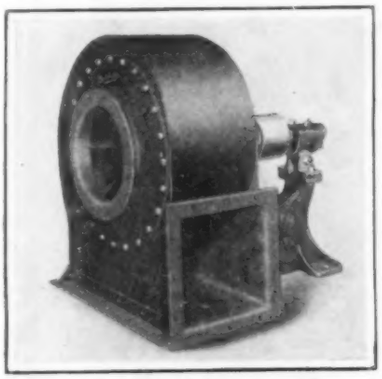
LIBERAL WORKING SAMPLE FURNISHED FREE

RUBBER FOOTWEAR STOCKS ARE REPORTED TO BE LOW

While reported production in rubber footwear throughout the various plants of the country has remained at high levels, the wholesale trade claims that there has been no overproduction and in the event of heavy weather and a greatly increased demand there would be a shortage in the supply, particularly in women's sizes and styles. From 75 to 80 per cent of the business now done in rubber footwear is in classes of shoes in which style and color have figured to a considerable degree in the last few seasons and production in these particular grades has been delayed to the last minute by the manufacturers. At the same time retailers have also been slow to place orders in view of the many new styles devised.

RUBBER-LINED FAN FOR CORROSIVE ACID FUMES

In tests extending over a year the Buffalo Forge Company, Buffalo, N. Y., has developed a rubber-coated exhausters fan for handling of corrosive acid fumes.



Rubber Lined Exhaust Fan

The exhauster fan is a complete unit having the entire wheel, shaft and inside of the housing coated with soft rubber. The rubber lining on the inside of the housing forms one continuous piece and extends over the faces of the flanges on both inlet and outlet.

The removable plate on one side for inspecting the inside of the fan has a rubber-to-rubber joint. The rubber covering on wheel and shaft is vulcanized into one piece. Thus every part of the fan coming in contact with the corrosive fumes is completely covered with soft rubber, affording perfect protection to the metal. The rubber coating is applied by the "Vulcalock" method as processed by the B. F. Goodrich Rubber Company.

Mellinger Moves Branch

The Mellinger Tire and Rubber Company, Kansas City, have announced that they will move their present branch at Philadelphia, Pa., to Warren, Ohio, and have leased offices in the latter place in the Community and Loan Company's building, South Park avenue. The Warren office will be the distributing point for the eastern part of the United States.

Heel Factory Moves

The Enterprise Rubber Heel Company, a subsidiary of the Lynch Heel Company, is removing its plant from Boston to Chelsea, Mass., where it will be located in the Lynch plant on Crescent avenue. Alterations necessary to take care of the incorporation of the new unit in the Lynch factory are now under way.

GOODYEAR TESTING FLEET GOES SOUTH FOR WINTER

The test fleet of the Goodyear Tire and Rubber Company has been split up for the winter. The fleet, which has "wintered" as a unit in the South for many years, will be split three ways this season, several of the cars and trucks having been sent to Macon, Ga.; some to Phoenix, Ariz., and a few remaining in Akron. The company has been testing tires in this way for the last 20 years over all kinds and conditions of roads, and operates in the South during the winter time because the hot weather and sun-baked roads provide the most adverse conditions for the welfare of tires, but the most favorable for testing purposes.

DES MOINES RUBBER CO. PLANS TO TREBLE OUTPUT

The Lake Shore Tire and Rubber Company, Des Moines, Iowa, is planning an expansion program which will involve the expenditure of $40,000 in new equipment. The facilities of the present plant, which is the old Iowa Cord Tire Company's factory, will be enlarged to meet a production schedule of 1,400 tires per day. Present production is at the rate of 450 tires daily.

The success of the company within the short time of its existence has been very gratifying to its officers. The factory was only purchased early in 1927 and several additional months were consumed in reconditioning the plant. Since the middle of the year it has been operating on a full time basis.

The business and sales offices of the company are in Chicago. The firm manufactures tires only and the entire output is taken over on contract by a number of jobbing firms.

New Lambertville Line

The Lambertville Rubber Company have announced that production is running at a high level and that it will offer a new line of novelty gaiters to the trade within a short time. The company recently conducted a salesmen's conference and started the men on the road with new samples.

PRODUCTION OF RUBBER HEELS SHOWS INCREASE

The production of rubber heels by manufacturers reporting to the Rubber Association of America, during the nine months ended September 30, shows an increase as compared with the production for the corresponding period of 1926. The total output for the nine months of 1927 aggregated 139,398,000 pairs as against 132,099,000 pairs for the same period of 1926. Shipments to shoe manufacturers dropped 4,000,000 pairs from the total of 76,925,000 pairs in 1926, but deliveries to the repair trade climbed approximately 13,000,000 pairs to 61,050,000 pairs.

Production by months of the present year has remained fairly constant with a slight increase noticeable in September and a gradual monthly decline in stocks on hand since June.

RUBBER SEAL PERFECTED TO PROTECT INNER TUBE

A new rubber rim seal, designed to fit over the valve stem of the inner tube, has been developed and is being marketed by the Wedler-Shuford Company of St. Louis. This molded rubber device is recessed to fit snugly

over the spreader lug at the base of the valve stem. When screwed down over the valve stem, it protects the inner tube from being pinched between the metal lug and the rim. At the same time the conical shape of the seal causes it to be forced tightly into the rim hole, making it watertight. This watertight feature is claimed as a special advantage not possessed by other seals. Watertightness protects the inner tube from danger of rust, and dirt.

The manufacturers say that with the rubber seal in use, the valve stem nut may be dispensed with since the seal performs the same function. If desired, the lug may also be omitted although the rubber seal is recessed so that its removal will not be necessary.

Vansul in New Offices

Vansul, Inc., 90 West street, New York City, distributors of rubber colors, pigments and fillers, have moved into larger quarters in the same building, where they have been located for the past year. They are now located in Suite 1006.

CATALPO!

GOODYEAR-ZEPPELIN CORP. MAY MOVE TO LOS ANGELES

There has been a persistent rumor around the Goodyear plant at Akron for the last month that the Goodyear-Zeppelin Corporation will shortly transfer its seat of operations from Akron to the Pacific Coast and will probably locate in or around Los Angeles. It has been known for some time that the Los Angeles Chamber of Commerce has been making overtures toward this end and that certain officials of the Goodyear company have looked with favor upon the plan. For the moment, however, the matter is being held in abeyance pending the outcome of the big dirigible contract for the U. S. Navy and if the contract is eventually awarded to the Goodyear company, the move to the coast is not improbable.

It is understood that Dr. Karl Arnstein, vice-president of the Goodyear-Zeppelin Corporation will make a trip to the Coast in the near future to report on the proposition.

U. S. LEADS WORLD IN RUBBER BELTING TRADE

The dominant position which the United States has enjoyed in the rubber belting trade of the world has been maintained over the last year, according to estimates recently issued by the Department of Commerce. During the ten months ended October 31, exports in rubber belting totaled 4,104,000 pounds, exclusive of shipments to non-continuous territories, which amounted to approximately 50 per cent of the total of all such goods shipped by leading manufacturing countries, and which is estimated at 8,636,000 pounds for the same ten months period.

If exports from the United States continue throughout the rest of the year at the same rate as indicated by this ten months total, the aggregate for the year will represent a record for American manufacturers in this line of rubber goods. The total exports of rubber belting from the United States during 1926 was 4,176,000 pounds.

New Rubber Flooring Co.

Rubber Products, Inc., a newly incorporated company headed by F. A. Laughead of Topeka, as president and located in Kansas City, has announced that they will soon begin manufacturing operations in the East Bottoms Building, Kansas City, Mo., which is being reconditioned for their use. The company will manufacture rubber flooring materials.

The company's program of operation also calls for the reclaiming of rubber which will go into their finished product.

Mr. Laughead, president of the concern, is also president of the Consumers' Sand Company, operating twenty plants throughout Kansas and adjoining states. Associated with him as secretary of the new company is J. F. Laughead, his brother; Burr R. Tarrant, treasurer, and W. H. Stewart, general superintendent. Mr. Stewart is the developer of what is described as a secret process for reclaiming used rubber. He has been engaged in the rubber industry eighteen years.

The Murray Rubber Company, Trenton, will shortly select a new secretary to fill the vacancy caused by the recent sudden death of Harvey R. Nason.

Michigan Rubber Company

The Michigan Rubber Company, a new corporation, capitalized at $200,000, has been formed by a group of Detroit and Pontiac men to manufacture rubber washers, gaskets and facings for automobile bumpers.

The new company has taken over the Zimmerman screen door factory at Owosso, Mich., and plan to start operations early in February.

H. M. Shepard, who was formerly connected with the Fisher Body Corporation, will be president of the new concern, with J. H. Kinsey, of Pontiac, as vice-president, and W. Ellison Lynch, of Owosso, as secretary and treasurer. The sale of the stock in the new enterprise has been authorized by the Michigan Securities Commission.

IT PAYS TO MICRONIZE

AN enormous molecular tenacity—the tremendous grip of each tiny particle—makes MICRONEX supreme for rubber footwear. It means the utmost in resiliency and long wear.

MICRONEX makes possible a lighter weight tennis shoe—a tougher sole and heel. The sun will not crack it, nor will water readily rot it. The jet black color makes black varnish superfluous.

For all stocks for tennis foxing, soling, moulded soles and heels, and fibre soles, insist upon

MICRONEX
Reg. U. S. Pat. Off.

The King of Rubber Pigments

You will find that it pays to MICRONIZE. Samples and specific data furnished upon request.

Binney & Smith Co
41 E. 42nd Street-New York City

CATALPO!

TIRE FABRIC PLANTS TO RESUME OPERATIONS

Two of the big tire fabric plants at New Bedford, Mass., which have been shut down for the last two months, the Devon Mills, of the Goodyear Tire and Rubber Company, and the Fisk Mills, a subsidiary of the Fisk Rubber Company, will resume operations early in January, according to an announcement from Charles S. Ashley, Mayor of New Bedford, after a consultation with officials of the two companies. Offices of the respective companies were opened at New Bedford on January 3, to receive applications for employment.

It is expected that operations will begin on a single shift basis, which will be extended as rapidly as possible to a full time basis, which was the schedule prevailing at the two plants prior to their closing on November 1, 1927.

It is also rumored that the resumption of operations at these two mills may be followed shortly by the return to production of the large Manomet No. 4 plant, recently acquired by the Firestone Tire and Rubber Company, and which will also be operated as a tire fabric plant.

Cholerton & Brickel, Inc., of 15 Exchange Place, Jersey City, N. J., has been chartered in Trenton with $100,000 capital to manufacture rubber goods of all descriptions.

The Philadelphia Rubber Works Company

Manufacturer of

RECLAIMED RUBBER

of

STANDARDIZED QUALITY

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OAKS, PA.
(Montgomery County)

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250 West 57th St., New York City

HELP WANTED

WANTED by a company making golf balls, a man capable of making golf ball thread and tape, who would be willing, for a fee, to give us satisfactory compounds and produce, at our plant, a satisfactory article. Reply to Box 474, advising us fee wanted.

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CHEMIST OR SALES ENGINEER

Chemist, college graduate, with 12 years' experience in various lines of rubber manufacturing, including tires, tubes, molded, dipped and blown goods, seeks a position as chemist or plant superintendent. Will also consider a connection in selling or demonstrating capacity where his technical knowledge can be of assistance. Box 470, THE RUBBER AGE.

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Has full knowledge of every phase of HARD RUBBER manufacturing—production, development, estimates and costs. Has proven his ability to create automatic machinery to meet specific needs. Is seeking a position where experience along these lines can be put to advantage. Age 35. Moderate salary. Address Box 473, THE RUBBER AGE.

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Tire Fabric Mill For Sale

15,000 spindles, complete, machinery in A-1 condition. Can be inspected at any time.

Address Box 475
The Rubber Age, 250 West 57th St., N. Y.

EQUIPMENT WANTED

WANTED at once, one Walcott-Ryder Cutting Press. Eagle Rubber Co., Ashland, Ohio.

CATALPO!

LATE MARKET PRICES

Crude, Scrap & Reclaimed Rubber - Cottons and Fabrics

JANUARY 4, 1928

COTTON

THE cotton market has taken a gradual upward turn during the last fortnight with a marked improvement in demand reported from the leading manufacturing centers. Coincident with the present mild stimulation within the raw cotton market there has been a revival in sales of cotton goods which has encouraged the trade. On the whole, however, both markets have developed a beneficial steadiness within the last few days and no sharp change is contemplated. The crop for the season will stand around 13,000,000 bales.

The following is the high, low and closing quotation on January 3, for spot middling:

	High	Low	Jan. 3 Close	Dec. 17 Close
January	19.60	19.04	19.04	18.93
March	19.68	19.09	19.14	19.09
May	19.83	19.25	19.28	.....

Tire Fabrics

There was very little activity in the tire fabric market during the holiday week, although sales to the total of 3,000,000 pounds were reported for the week immediately preceding Christmas and mills report that they are already sold up for the first quarter of the year. With this new business in hand the factories are in much better shape than a month ago and prices are maintaining steadily, without any significant change from those prevailing a fortnight ago. Late prices are as follows:

CORD			
Peeler, carded, 23/5/3	lb.	.43½@	.44½
Peeler, carded, 23/4/3	lb.	.45 @	.46
Peeler, carded, 13/3/3	lb.	.42 @	.43
Peeler, carded, 15/3/3	lb.	.42½@	.43
Egyptian, carded, 23/5/3	lb.	.54 @	.55
Egyptian, combed, 23/5/3	lb.	.58 @	.59
CHAFERS			
Carded American, 8 oz.	lb.	.39 @	.40
Carded American, 10 oz.	lb.	.42 @	.43
Carded American, 12 oz.	lb.	.41 @	.42
Carded American, 14 oz.	lb.	.40 @	.41
LENO BREAKER			
Carded American, 8¼ oz.	lb.	.41 @	.43
Carded American, 10¼ oz.	lb.	.41 @	.43
SQUARE WOVEN			
Carded American, 17¼ oz. 23-11 ply	lb.	.44 @	.45
Carded American, 17¼ oz. 10-5 ply	lb.	.39 @	.40

Sheetings

In spite of the holiday season the market in sheetings has been quite full of factory inquiries and quotations have remained firm. A number of good contracts are reported calling for deliveries up to and through March. Latest quotations follow:

40-inch 2.50-yard	yd.	.13¼@	.13½
40-inch 2.85-yard	yd.	.11⅝@	.11¾
40-inch 3.15-yard	yd.	.12¼@	.12½
40-inch 3.60-yard	yd.	.10⅝@	.10⅝
40-inch 3.75-yard	yd.	.08¾@	.09
40-inch 4.25-yard	yd.	.07¾@	.08

Ducks

The last two weeks have brought a number of fairly large size orders into the cotton duck market and the demand is continuing in fair volume, in spite of the usual holiday lull. Moderate size commitments by mail orders are also reported. Late prices are quoted as follows:

Belting and Hose	lb.	.35 @	.36
Enameling	lb.	.35½@	.40
Shoe Ducks	lb.	.31 @	.35
Single filling	lb.	.15 @	.17½
Double filling	lb.	.18 @	.19

RECLAIMED RUBBER

Buying interest declined in the reclaimed market during the past fortnight with the usual inventory-taking period approaching but lack of immediate demand did not affect prices nor has the sudden increase in scrap rubber price levels made any change in the reclaimed quotations. The reclaimed market looks for improvement as soon as the inventory period is past at the factories. Late prices follow:

High Tensile			
Super-Reclaim No. 1 Black	lb.	.17¾@	.18
Super-Reclaim No. 2 Black	lb.	.14 @	.14½
High Tensile Red	lb.	.16¼@	.16½
Shoe			
Unwashed	lb.	.08 @	.08¼
Washed	lb.	.10 @	.10½
Tube			
No. 1 (Floating)	lb.	.17½@	.18
No. 2 (Compounded)	lb.	.14¼@	.14½
Tires			
Black, washed		.10 @	.10¼
Black, unwashed		.08¼@	.08½
Black selected tires	lb.	.08¾@	.09
Dark Gray	lb.	.11¼@	.12
Light Gray	lb.	.13 @	.13¼
White	lb.	.14½@	.15
Truck, Heavy Gravity	lb.	.07¾@	.08
Truck, Light Gravity	lb.	.08¼@	.08½
Miscellaneous			
Mechanical Blends	lb.	.07 @	.08
Red	lb.	.14½@	.15

Scrap Rubber

The scrap rubber market shows a much firmer trend than two weeks ago with prices boosted all along the line. Stocks are reported scarce especially in the west where storms have delayed accumulations. Consumers are reported coming into the market with good sized orders but prices are not expected to recede in the face of the expected demand and low stocks. Latest prices follow:

(Prices to Consumer)

Auto tire peelings	ton	38.00	@40.00
Standard White auto	ton	65.00	@67.50
Mixed auto	ton	28.00	@29.00
Bicycle tires	ton	25.00	@26.50
Clean solid truck tires	ton	30.00	@32.00
Boots and shoes	lb.	.01⅞@	.02
Arctics, trimmed	lb.	.01⅝@	.01½
Arctics, untrimmed	lb.	.01 @	.01¼
Inner tubes, No. 1	lb.	.09 @	.09¼
Inner tubes, No. 2, compounded	lb.	.06 @	.06¼
Inner tubes, Red	lb.	.08¼@	.08⅝
Air Brake Hose	ton	37.00	@38.00
Rubber Hose	ton	17.00	@18.00

CRUDE RUBBER

THE crude rubber market has maintained a quiet, steady and slightly upward trend during the last two weeks but the actual trading over the holiday season was so slight as to bring a dull tone to both the outside New York market and on the floor of the Rubber Exchange. Factory buying interest has almost wholly disappeared with the approach of the usual annual inventory taking period. The chief event of interest in the market and which usually tends to affect price levels has been the continued decline in London stocks over the last few weeks, but continued heavy invoiced shipments to the United States serves to counteract any bullish tendencies. Latest prices on the New York outside market follows:

Plantations—			
Ribbed Smoked Sheets—			
Spot	.41 @		.41½
January	.41 @		.41½
February-March	.41½@		.41¾
April-May	.41⅞@		.42¼
First Latex, crepe spot	.41½@		.41¾
Amber Crepe, No. 2 spot	.38½@		.39⅛
Amber Crepe, No. 3	.38⅜@		.38¾
Amber Crepe, No. 4	.37⅞@		.38¼
Brown Crepe, Rolled	.38¾@		.84
Brown Crepe, Clean, thin	.38⅛@		.38½
Brown Crepe, Specky	.34 @		.34¾
Liquid Latex, per gal.	1.50 @		1.75
Pontianac—			
Bangermassin	Nominal		
Palembang	Nominal		
Prime Pressed	Nominal		
Sarawak	Nominal		
Paras—			
Up-river Fine	.35½@		.36
Up-river Medium	.30 @		.32
Up-river Coarse	.26½@		.27
Acre Bolivian, fine	.35½@		.36
Tapajos, fine	.42 @		—
Cut Beni Bolivian, fine	.49 @		—
Caucho Ball—			
Upper, shipment	.27½@		.27¾
Island, fine	.30 @		....
Centrals—			
Corinta, scrap	.30 @		—
Esmeralda, sausage	.25 @		.25½
Guayule, washed and dried	.29 @		—
Africans—			
Benguela, No. 2	Nominal		
Congo, upper, black	Nominal		
Congo, upper, red	Nominal		
Balata—			
Block, Colombia	.35½@		.38
Block, Cuidad	.35 @		.36
Gutta Percha—			
Siak	.24 @		—
Red Macassar	3.00 @		—

LONDON MARKET

Standard Ribbed Smoked Sheets—Buyers		
Spot	.19⅞@	.20d
January	.19⅞@	.20d
February	.20⅛@	.20¼d
March	.20¼@	.20⅜d

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—Sellers		
Spot	.19⅝@	.19¾d

Recent daily closing prices on the Rubber Exchange of New York are shown on the Financial Page in the News Section of this issue. Daily spot prices of Ribbed Smoked Sheets are given in the Statistical Section.

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Perfect Beads

Entire freedom from bead trouble in the construction of straight side tires is assured by the use of either National "(Patent)" High Tensile Strength, Flat Woven, Bead Braid on our new (Pratt Patent) Bead Cables. These cables, made to dimensions specified, have seven strands, yet only one piece of wire is used without soldered, welded or brazed joint.

Write for working samples of either National flat braid or Pratt cables (no charge to tire manufacturers) and full information as to our products and service.

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The Hunter Process
in
The Carrier Ejector System Dryer

The successful drying of Rubber is essentially a problem of humidity control. The patented Hunter Process is used exclusively in Carrier Dryers. Carrier automatically controlled dryers reduce time, space and milling costs.

Write concerning your problem

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750 Frelinghuysen Ave. Newark, N. J.

LATE RUBBER CHEMICAL PRICES

Accelerators — Colors — Softeners — Compounding Materials

JANUARY 5, 1928

NOW that the holiday and inventory season has passed, the market for rubber chemicals and compounding materials has become again active. Orders for materials are flowing in at a steady pace and in a number of cases, producers are hard put to make spot deliveries. This sudden activity comes as a welcome surprise after a rather dull market during the latter half of December. Although the rubber factories had been working at fair production levels during the early part of last month, they eased off as the holidays approached and chemical houses were the first to feel this let-up.

From present indications, however, the rubber factories are again back to full schedule and it is very probable that 1928 will exceed by a wide margin the record breaking year just past, in the volume of rubber chemicals consumed. Prices have been firm in the face of increased demand and only a few changes are reported, which are included in the quotations given below. Several new accelerators are expected to be put on the market shortly.

ACCELERATORS

Organic			
A-7	lb.	.70 @	.80
A-11	lb.	.75 @	.90
A-16	lb.	.65 @	.85
A-19	lb.	.75 @	.90
A-20	lb.	.60 @	.75
Aldehyde ammonia, crystals	lb.	.65 @	.70
Aniline oil, drums, f.o.b. works	lb.	.15 @	.16¼
Cryiene	lb.	.70 @	—
paste	lb.	.50 @	—
Di-Ortho-Tolyiguanidine	lb.	.85 @	.90
Diphenyiguanidine	lb.	.68 @	.72
Ethylidene aniline	lb.	.60 @	.65
Excellerex	lb.	.35 @	.40
Formaldehyde Aniline	lb.	.38 @	.42
Grasselerator 102	lb.	.62½@	.67½
Grasselerator 552	lb.	4.45 @	4.60
Grasselerator 808	lb.	1.05 @	1.35
Grasselerator 833	lb.	1.50 @	1.75
Heptene	lb.	.55 @	—
Hexamethylene-tetramine	lb.	.62½@	.67½
Lithex	lb.	.18 @	.20
Methylenedianilide	lb.	.38 @	.40
Monex	lb.	3.25 @	—
Para-Nitrosodimethylaniline, f.o.b. works	lb.	.92 @	.96
Piperidine-Piperidyidithio-Carbamate	lb.	4.45 @	4.60
Quinoidine	lb.	.40 @	—
R & H 40	lb.	.50 @	.55
R & H 50	lb.	.50 @	.55
Safex	lb.	1.20 @	1.25
Tensilac, No. 39	lb.	.55 @	.60
Tensilac, No. 41	lb.	.65 @	.70
Thermlo F	lb.	.50 @	.55
Thiocarbanilide, kegs	lb.	.23 @	.25
Thionex	lb.	3.25 @	—
Trimene	lb.	.75 @	—
base	lb.	1.20 @	1.35
Triphenylguanidine	lb.	.65 @	.70
Vulcanex	lb.	.82 @	.86
Vulcone	lb.	.70 @	.74
Vulcanol	lb.	1.05 @	1.08
Z 88	lb.	.75 @	1.00
Inorganic			
Lead, sublimed blue	lb.	.08¼@	.08¾
Lead, white	lb.	.10½@	.12½
Litharge, domestic	lb.	.08¾@	—
Magnesia, calcined, light	lb.	.06 @	.12
heavy	lb.	.04 @	.04½

COLORS

Blacks (See Compounding Materials)			
Blues			
Prussian	lb.	.33 @	.35
Ultramarine	lb.	.08 @	.35
Browns			
Sienna, Italian	lb.	.05 @	.12½
Umber, Turkey	lb.	.04½@	.06
Greens			
Chrome, light	lb.	.27 @	.31
medium	lb.	.29 @	.32
dark	lb.	.31 @	.34
Chromium Oxide, bbl.	lb.	.35 @	.38
Reds			
Antimony crimson, 15/17	lb.	.40 @	—
sulphur free	lb.	.50 @	.52
golden 15/17 F.S.	lb.	.16 @	.25
Indian English (dom.)	lb.	.08 @	.10
Oximony	lb.	.13¼@	—
Para toner	lb.	.13 @	.14
Red oxide, reduced	lb.	.10 @	.11
pure	lb.	.14 @	.15
Venetian red	lb.	.02 @	.06
Vermillion, quicksilver, English	lb.	1.85 @	1.95
Whites			
Lithophone, Akcolith	lb.	.05 3/5@	.06
Lithophone, Azolith	lb.	.05¼@	.05¾
Lithopone, Vanolith	lb.	.05¾@	—
Titanox	lb.	.10 @	.10½
Cal. Base Pigment	lb.	.10 @	.10½
Zinc Oxide—American Process			
American Azo: ZZZ (lead free)	lb.	.06½@	.07
ZZ (leaded)	lb.	.06⅝@	.07⅛
Zinc Oxide—French Process			
White seal	lb.	.11⅞@	—
Green seal	lb.	.10⅞@	—
Red Seal		.09⅝@	—
Yellows			
Chrome	lb.	.17 @	.20
Ocher, French medium	lb.	.03½@	.06
domestic	lb.	.01⅝@	.02

COMPOUNDING MATERIALS

Aluminum Flake	ton	21.85 @	24.50
Ammonia carbonate	lb.	.10½@	.12
Are-O-Sol	ton	8.00 @	11.00
Asbestine	ton	14.75 @	18.00
Barium carbonate	lb.	.02¼@	.04
Barium Dust	lb.	.05 @	.06
Barytes southern off-color,	ton	12.00 @	18.00
Western prime white	ton	23.00 @	—
imported	ton	27.00 @	36.00
Basofor	lb.	.04½@	—
Blacks			
Arrow "Aerfloted"	lb.	.08 @	.12
Bone Black	lb.	.05½@	.11
Carbon, compressed	lb.	.07½@	.11½
Carbon, uncompressed	lb.	.07 @	.11
Drop Black	lb.	.06 @	.10
Lamp Black	lb.	.12 @	.40
Micronex	lb.	.08 @	.12
Velvetex carbon	lb.	.04 @	.07
Blanc fixe dry f.o.b. works	lb.	.04 @	—
Carrara filler	lb.	.01¾@	.02
Catalpo (fact.)	lb.	.02 @	—
Chalk	ton	12.00 @	14.00
Clay, China, domestic	ton	8.00 @	9.00
Aerfloted Suprex	ton	9.00 @	20.00
Mineral Flour, c. l. fob mine	ton	20.00 @	23.00
Tensulite		15.00 @	—
Glues, extra white	lb.	.20 @	.24
medium white	lb.	.20 @	.24
common bone	lb.	.14 @	.15
Magnesia, carbonate	lb.	.08½@	.11
Mica, powdered	ton	90.00 @	100.00
Rotten Stone (powdered)	lb.	.02½@	.04½
Soapstone, powdered	ton	15.00 @	22.00
Starch, powdered	cwt.	3.30 @	3.70
Talc, domestic	ton	12.00 @	15.00
Velvetex	lb.	.04 @	.07
Whiting, commercial	cwt.	.85 @	1.00
English cliffstone	cwt.	1.50 @	—
Superfine	ton	10.00 @	12.00
Vansulite	ton	12.00 @	—
Wood pulp XXX	ton	45.00 @	—
Wood pulp X	ton	25.00 @	—
Zinc Carbonate	lb.	.10 @	.12

MINERAL RUBBER

Genasco (factory)	ton	50.00 @	52.00
Montezuma, solid	ton	28.00 @	36.00
Montezuma, granulated	ton	32.00 @	42.00
Paradura	ton	62.50 @	65.00
Pioneer, MR, solid	ton	27.00 @	35.00
Pioneer-granulated	ton	32.00 @	40.00
Robertson, MR, solid	ton	24.00 @	80.00
M.R. (gran)	ton	24.00 @	80.00

SOFTENERS

Acids			
Nitric, 36 degrees	cwt.	5.00 @	5.25
Sulphuric, 60 degrees	ton	10.50 @	11.50
66 degrees	ton	15.00 @	16.00
Tartaric, crystals	lb.	.31½@	—
Acids, Fatty			
Stearex	lb.	.10 @	.14
Stearic, single pressed	lb.	.10 @	.11
Double pressed	lb.	.11½@	.12
Alkalies			
Caustic soda, 76%	cwt.	3.76 @	3.91
Soda ash, 58% C.L.	cwt.	1.42½@	1.45
Oils			
Castor, No. 3 bbls.	lb.	.13½@	.14
Corn, crude, bbls.	lb.	.09¼@	.11
refined	lb.	.11 @	.11½
Cottonseed, crude		.08½@	.08¾
Cycline	gal.	.27 @	.34
Degras	lb.	.04¼@	.04½
Dispersol A (light)	lb.	.15 @	.16
Dispersol B (dark)	lb.	.14 @	.15
Fluxrite	lb.	.05 @	.06
Glycerine, C.P. drums	lb.	.26 @	.26½
Linseed, Raw C.L. bbl.	lb.	.09½@	.10
Palm Lagos	lb.	.07¼@	.07½
Niger	lb.	.07¾@	.08
Vansulol	lb.	.10½@	—
Para-Flux	gal.	.17 @	—
Peanut, domestic, crude	lb.	.12 @	.12¼
Petrolatum, white	lb.	08⅞@	.09
amber	lb.	.03¾@	.04
dark amber	lb.	.03⅝@	.03½
Pine, steam distilled	lb.	.67 @	.69
Rapseed, refined	gal.	.80 @	.82
Rosin, first rectified	gal.	.55 @	—
second rectified	gal.	.58 @	—
Resins and Pitches			
Pitch, Burgundy	lb.	.06½@	.07½
coal tar	gal.	.05½@	.06
pine, 200 lb. gr. wt.	bbl.	9.00 @	10.00
Rosin, grade K, 280 lb.	bbl.	8.95 @	—
Pigmentar	gal.	.33 @	.41
Tar Retort, 50 gal.	bbl.	13.00 @	14.00
Solvents			
Acetone, pure	lb.	.14½@	—
Alcohol denatured, No. 1 bbls.	gal.	.37½@	.44½
Benzol, 90%	gal.	.28 @	—
pure		.29 @	—
Carbon bisulphide	lb.	.05½@	.06¼
Carbon tetrachloride		.06¾@	.07½
Motor gasoline, steel bbls.	gal.	.17 @	—
Naptha, V. M. & P.	gal.	.14 @	—
Turpentine, spirits	gal.	.57½@	.58½
wood	gal.	.43 @	—
Waxes			
Beeswax	lb.	.56 @	.58
Carnauba	lb.	.49 @	.50
Ceresin, white	lb.	.13 @	.14
Montan, crude	lb.	.07 @	.07½
Ozokerite, black	lb.	.30 @	—
green	lb.	.26 @	.30
Miscellaneous			
RSL Mold Solution	gal.	.75 @	.100

ANTI-OXIDANTS

Antox	lb.	.79 @	.83
Neozone	lb.	.74 @	—
Stabilite	lb.	.65 @	—
VGB	lb.	.55 @	.66

SUBSTITUTES

Black	lb.	.08 @	.14
White	lb.	.10 @	.16
Brown	lb.	.08 @	.15

VULCANIZING INGREDIENTS

Sulphur Chloride (drums)	lb.	.03½@	.06
Sulphur flour,			
Superfine bags	cwt.	2.20 @	2.80
Superfine, bbls.	cwt.	2.55 @	3.10
100% pure, refined, bags	cwt.	2.60 @	3.15
bbls.	cwt.	2.95 @	3.50

TIRES & TUBES
CRUDE RUBBER

STATISTICAL SECTION

AUTOMOBILES
GASOLINE

IT is too early to include many of the final statistics for the past year and annual summaries in most of the following tables will be included in subsequent issues. The outstanding figure for the year will be the crude rubber consumption in the United States, which will probably run as low as 373,000 tons, a considerable drop from the commonly predicted figure of 400,000 at this time last year.

Imports have continued at high levels throughout the year in spite of the fact that the restriction plan has been operating on the minimum allowance of 60 per cent for the majority of the year. As a consequence of these large arrivals and the lower consumption during the last few months of the year, the stocks on hand in the United States have increased. London stocks during the year reached a new peak also but have shown a decided decline over the last few weeks.

The crude rubber markets in New York, London and Singapore closed the year steady and quiet and showed but slight variations in the range of prices throughout the year. The marked decline in tire production is reflected in the reduction in output in the automotive field and has been the chief subject of comment in every market review of the rubber industry during the year.

The New Year, however, starts with considerable promise, and not only is the general feeling within the industry one of deserved optimism but the trend in the crude rubber markets and among the plantation interests is decidedly bullish.

The latest available figures on the industry are included in the following tables.

PLAN OF THE SECTION

The statistics included in this section have been chosen for their constant importance to the rubber industry. The tables are reprinted in the same relative position in every issue, each table being kept current by the addition of new figures as soon as they become available. The section accordingly affords the most up-to-date, complete and convenient statistical service in the industry.

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U. S. Imports and Exports of Crude Rubber

	Gross Imports			Re-exports			Net Imports
YEARS	Long Tons	Total Declared Value	Average Declared Value per pound Cents	Long Tons	Total Declared Value	Average Declared Value per pound Cents	Long Tons
1921	185,394	73,772,677	17.76	5,716	2,414,924	18.86	179,678
1922	301,076	101,843,188	15.10	4,809	1,921,828	17.84	296,267
1923	309,144	185,060,304	26.72	8,772	5,672,319	28.87	300,372
1924	328,056	174,231,331	23.71	10,309	6,057,637	26.23	317,747
1925	396,642	429,705,014	48.36	14,827	19,847,753	59.76	381,815
1926	413,338	505,817,807	54.63	17,671	22,470,583	56.77	395,667
1925:							
Jan.	32,898	22,406,756	30.41	1,162	963,593	37.02	31,736
Feb.	24,696	18,532,115	33.50	979	779,406	35.53	23,717
Mar.	33,072	25,146,691	33.94	1,345	1,105,119	36.69	31,727
Apr.	32,506	24,874,562	34.16	1,130	1,009,305	39.86	31,376
May	36,932	30,311,754	36.64	1,203	1,323,445	49.12	35,729
June	31,569	26,855,883	37.98	1,198	1,577,106	58.75	30,371
July	32,455	33,701,723	46.36	1,278	2,132,681	74.52	31,177
Aug.	33,412	39,834,348	53.22	1,131	1,623,258	64.08	32,281
Sept.	26,367	36,686,013	62.11	1,154	1,820,360	70.41	25,213
Oct	34,651	50,027,338	64.45	1,132	1,989,291	78.43	33,519
Nov.	37,755	56,271,963	66.54	1,605	2,898,930	80.65	36,150
Dec.	40,329	65,055,868	72.02	1,510	2,625,259	77.61	38,819
1926:							
Jan.	42,404	72,528,151	76.36	2,084	3,747,505	80.28	40,320
Feb.	32,865	58,733,370	79.78	1,430	2,280,168	71.17	31,435
Mar.	42,152	70,589,581	74.76	1,836	2,735,284	66.51	40,316
Apr.	34,544	48,742,539	62.99	1,128	1,605,093	63.58	33,416
May	29,756	36,896,080	55.35	1,052	1,558,987	66.17	28,704
June	24,900	34,498,561	61.85	1,105	1,371,217	55.41	23,795
July	35,820	33,061,470	41.20	1,554	1,743,854	50.09	34,266
Aug.	27,400	24,670,752	40.21	1,318	1,339,563	45.38	26,082
Sept.	37,112	32,625,032	39.02	1,437	1,519,870	47.20	35,675
Oct.	29,333	25,300,483	38.50	1,366	1,316,270	43.02	27,967
Nov.	38,925	34,661,631	39.97	1,482	1,320,461	42.00	37,443
Dec.	37,754	33,261,366	39.33	1,904	1,841,305	43.16	35,850
1927:							
Jan.	43,340	36,753,719	37.99	1,526	1,444,734	42.22	41,814
Feb.	28,338	23,110,257	36.41	2,451	2,277,297	41.47	25,887
Mar.	35,514	28,693,026	36.07	2,763	3,249,665	52.50	32,751
Apr.	46,202	37,284,806	36.15	1,575	1,428,425	40.45	44,627
May	36,543	30,998,657	37.87	2,782	2,501,562	41.74	33,761
June	33,045	27,833,770	36.28	1,775	1,650,592	38.99	31,270
July	37,678	31,678,259	37.53	1,958	1,560,853	35.58	35,720
Aug.	32,810	26,396,904	36.59	1,809	1,382,768	34.49	31,001
Sept.	33,301	23,852,857	33.73	3,500	3,036,929	34.91	29,801
Oct.	30,184	22,163,044	32.77	2,513	2,042,713	36.29	27,671
Nov.	38,113	27,039,129	31.67	2,468	2,014,196	36.43	36,123

U. S. Consumption of Crude Rubber

(Rubber Association of America statistics raised to 100 per cent—All figures in long tons)

Figures on Monthly Basis

	1921	1922	1923	1924	1925	1926	1927
January	5,045	16,988	30,106	29,058	29,638	32,196	31,518
February	5,955	14,767	30,149	25,736	29,761	31,136	30,137
March	9,190	21,408	36,629	28,385	33,498	32,936	36,141
April	13,084	19,294	29,085	27,129	34,139	32,696	35,871
May	16,023	23,246	36,155	25,845	35,322	29,364	34,592
June	16,142	31,713	24,272	22,753	35,822	28,598	33,801
July	18,310	24,522	17,685	23,396	36,053	27,577	29,219
August	23,649	29,361	20,359	28,982	35,909	34,533	33,480
September	16,705	24,410	17,594	31,497	31,691	32,904	27,214
October	16,814	26,881	21,321	31,520	29,047	29,836	26,790
November	14,105	24,950	20,437	27,289	28,853	28,080	26,792
December	15,482	25,070	21,902	27,199	28,748	26,293	
Totals	170,504	282,560	305,694	328,769	388,481	366,149	

Figures on Quarterly Basis

Quarter	1921	1922	1923	1924	1925	1926	1927
Jan./Mar.			96,776	87,609	95,263	94,301	99,216
Apr./June	65,468	127,360	89,498	75,674	104,099	87,109	103,242
July/Sept.			55,621	83,813	99,493	93,793	89,893
Oct./Dec.	105,962	155,067	63,617	92,656	85,789	83,212	
Totals	171,425	282,427	305,507	339,752	384,644	358,415	

Note—The Rubber Association estimates its monthly rubber consumption figures to be 90 per cent complete. Up until 1925 the quarterly figures were likewise estimated to be 90 per cent complete; beginning with 1925 an estimate of 92 per cent completeness has been used. These estimates have been used in raising the figures in this table to 100 per cent. The quarterly figures are generally regarded as the most authentic; the monthly figures may be accepted as preliminary.

Rubber Invoiced to the U. S.

(Reported by American Consuls—Quantities in Long Tons)

During the Week Ended	From Br. Malaya	From Ceylon	From Dutch East Indies	From London & Liverpool	Total
October 22	4,514	690	1,833	922	7,959
October 29	2,903	858	1,208	810	5,779
November 5	4,902	611	2,850	938	9,301
November 12	2,956	631	1,593	1,032	6,212
November 19	4,579	651	1,051	451	6,732
November 26	4,014	779	1,588	1,945	8,326
December 3	6,348	847	1,641	943	9,779
December 10	5,014	709	2,890	635	9,248
December 17	5,395	565	1,801	1,789	9,550
December 24	5,483	1,030	1,487	1,229	9,229

Daily Spot Closing Prices of Ribbed Smoked Sheet Rubber—*New York Market, in Cents per Pound*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Ave.
1925																																
July	81⅛	81⅞	85⅝	—	—	88⅛	90½	95⅞	94⅞	99⅞	106½	—	110	105⅝	110⅝	117	116¾	115⅞	—	121	117⅛	119	117⅝	112¼	112¼	107¾	96⅝	93¾	89⅞	93¾	103⅛
August	94½	—	96½	—	85⅝	86⅜	81⅜	79	—	71⅝	72½	76½	81½	80⅝	77⅜	—	73¾	80½	83½	83½	82⅝	82	82⅝	85¼	85¾	85¾	87¾	90	83
September	88¾	87¼	85	—	81⅛	—	—	78¼	80½	58	86⅞	—	92	93⅝	93⅝	93⅝	92¾	92⅝	94¾	—	92	93⅛	89	89	89⅝	91¾	91½	—	85⅝
October	91¼	91¼	92	—	94½	97	—	97½	99	101	—	97½	97⅝	95½	97	99⅞	99	—	99⅞	102	98⅜	99⅞	99⅞	101⅞	101½	99¾	100¾	98
November	99¾	—	—	—	98⅜	98¾	100	—	98⅜	99½	100¼	101⅝	104½	105½	—	99¾	97	107	109⅝	110⅝	110½	—	110⅞	109	106¼	—	108¼	108⅝	107	104⅝
December	106⅝	108½	107¾	107¾	108¾	—	103	109	109¾	106	105½	105½	—	101	—	90¾	93	88¼	86⅝	—	88¼	90¾	88⅝	88¾	—	—	—	91	91¼	98½
1926																																
January	—	—	87	87¼	85½	86½	87½	87⅞	—	88¼	88¾	88¾	88¾	85½	84½	82½	—	75¼	75¼	75¼	75	72	72⅞	—	68	66½	67	69¾	70½	69	—	79½
February	—	67½	66¼	66¾	68⅝	69	—	69	67	66	66	65½	61½	63	62	60½	60½	60	59	60	—	61½	—	55	60	51¾	51	—	—	—	—	62¾
March	55	58	53	53	53⅛	57½	58	56	55⅝	61	60	—	63	62	62	60½	60½	61	61	61	61½	49	48	48	48	59½	60	58	58½	48½	—	59
April	59	—	59	59	59	58	56	56⅝	56½	53	—	51½	51½	50½	48½	48⅞	47	47	47½	47½	48	47¼	44	46	45	45	48	49	—	—	—	51¼
May	48½	—	—	50	50¾	49⅝	49¾	49½	49	49	49½	49	49¼	47¾	47½	47½	47	47½	47½	47½	47½	44	44	43½	45	45	43	43	43	42	—	47¾
June	41½	—	41½	42	41½	42	41½	41½	43	42	42	41½	41½	43½	47½	43	43	43	43	43	—	44	44	43½	43	42	42	42	41	42	42	42½
July	42	—	42	42	41½	41½	41½	41½	41½	41	41	41	41	40	40	40	40	40	40	41½	41½	41	41	41½	41½	41½	41	41	39	39	42	41¼
August	—	—	42	38½	38¾	39¼	40¼	40¼	40¼	38¾	38¾	37½	37½	38½	40¼	40¼	38	38	38	38	39	39	39	39	39	39½	39½	39½	39½	39	40	38½
September	40¼	40¼	—	—	—	—	—	40¼	40¼	40¾	40¾	40¼	—	—	40¾	43⅝	40¼	40½	42½	42½	42¼	42¼	42½	42½	42½	42½	42½	42½	42½	42½	—	41
October	43	43	—	—	—	43⅛	42½	42¼	42½	42½	42½	42½	42½	42½	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	—	42½
November	41¼	—	41	41¼	41¼	41½	41¼	41¼	41¼	41¾	42¾	41¾	41¼	40⅝	40⅝	40⅝	40½	40⅝	39½	39	38	38	38	38	38	42½	42½	42½	42½	42½	—	39½
December	36¾	37½	37½	37½	—	37	37	37	37	37½	37½	—	37½	37¾	37¾	38	38	38	—	38	38¼	38½	38¾	39	39	39	37¾	37	37	38½	—	38¼
1927																																
January	—	—	38½	39	39¾	40¾	40¾	40¾	—	40½	40¾	40¾	40	39¾	39¾	—	39¼	38¾	38¾	38¾	38¼	38¼	38¾	38¾	38¾	38¾	38¾	38¾	38	38	—	38¾
February	37¾	37¾	37¾	37½	37½	—	—	37¾	37⅞	38	37¾	—	38¼	38⅛	38⅛	38⅛	38¼	38⅛	38⅛	38⅛	38½	38½	38½	39	39	39	39½	39½	39	—	—	38¾
March	39¾	39¾	40	40¾	40¾	—	—	40¾	40⅝	40⅝	41¼	41¼	41¼	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41	41	41	41¼	41¼	41
April	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41¾	41	40¾	40¾	40¾	40¾	40¾	40¾	40¾	41	40¾	40¾	40¾	40¾	40¾	40½	40½	40½	40½	—	40¾
May	—	41	41	41	41	41¼	41¼	41¼	41¼	—	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾
June	40¾	40¾	40½	40½	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾	40¾
July	35½	—	—	—	—	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½
August	35½	35½	35¼	35¼	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½	35½
Sept.	34	33¾	—	—	33¾	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½	33½
Oct.	33⅝	—	—	—	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝	33⅝
Nov.	35	35¼	35½	35½	36¾	36¾	36¾	36¾	—	37	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾	36¾
Dec.	40½	40¾	40¾	40¾	40¾	—	40½	40½	40	40½	40½	—	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
1928																																
January	—	41¼																														
February																																
March																																
April																																

Average Spot Closing Prices—Ribbed Smoked Sheets

(New York Market)

Average Price per Pound for Years 1910-1921

Year	Cents	Year	Cents	Year	Cents
1910	206.60	1914	65.33	1918	60.15
1911	141.30	1915	65.85	1919	48.70
1912	121.60	1916	72.50	1920	36.30
1913	82.04	1917	72.23	1921	16.36

Average Monthly Price per Pound Since 1922

Months	1922 Cents	1923 Cents	1924 Cents	1925 Cents	1926 Cents	1927 Cents	1928 Cents
Jan.	18.82	32.73	25.86	36.71	79.50	38.75	
Feb.	16.12	35.14	25.29	36.01	62.25	38.25	
Mar.	14.53	34.21	22.83	41.00	59.00	41.04	
Apr.	15.99	32.48	22.51	43.64	51.25	40.86	
May	15.25	27.39	18.89	58.47	47.75	40.76	
June	15.11	26.88	18.81	77.26	42.50	37.25	
July	14.67	26.10	22.16	103.16	41.03	34.44	
Aug.	13.93	28.84	26.17	82.99	38.50	35.12	
Sept.	14.44	28.95	27.56	88.88	41.00	33.67	
Oct.	19.78	26.93	31.13	98.01	42.50	34.32	
Nov.	23.88	27.14	34.33	104.80	38.50	37.58	
Dec.	27.42	26.60	37.88	98.51	38.25	40.63	
Average for Year	17.50	29.45	26.20	72.46	48.50	37.72	

London Closing Prices of Ribbed Smoked Sheet

(In Pence Per Pound)

Sixth Restriction Year—First Quarter

Day	Nov.	Dec.	Jan.	Day	Nov.	Dec.	Jan.
1	16⅞	19⅝	—	17	17¾	19½	
2	16⅞	19½	—	18	18⅛	—	
3	17	19½	19⅞	19	18¼	19¾	
4	17¼	—	19⅞	20	—	19⅞	
5	17½	19¾		21	18½	19⅞	
6	—	19⅞		22	18½	19⅞	
7	17½	19¾		23	18⅞	20	
8	17½	19⅝		24	19⅜	—	
9	17¾	19⅝		25	19½	—	
10	17⅝	19¾		26	19⅞	—	
11	17½	—		27	—	—	
12	17½	19½		28	20	19⅞	
13	—	19½		29	19⅞	20	
14	17⅝	19⅝		30	19½	20	
15	17¾	19½		31	—	—	
16	17⅞	19½					

(The average price for the period for which daily prices are reported above is approximately 19.445 pence. The British Colonial Secretary has announced that only 60% of the standard production will be exportable from the restricted area during the next quarter if the price during the entire current quarter does not average at least 21 pence.)

Average Price in Previous Quarters

Quarter	1922-23	1923-24	1924-25	1925-26	1926-27
November-January	14.285	14.175	17.9983	46.709	19.265
February-April	16.858	12.917	19.356	28.103	19.696
May-July	**14.242**	**10.947**	**38.469**	**21.001**	**18.165**
August-October	14.944	14.632	43.269	20.199	16.620

Spot Closing Cotton Prices

(Middling Upland Grade—New York Market)

Recent Daily Price Per Pound

Day of Month	Nov. Cents	Dec. Cents	Day of Month	Nov. Cents	Dec. Cents	Day of Month	Nov. Cents	Dec. Cents
1	20.75	19.65	11	20.25	——	21	20.30	19.55
2	21.30	19.85	12	20.30	18.70	22	20.00	19.50
3	21.15	19.95	13	——	18.60	23	19.90	19.75
4	21.20	——	14	20.05	19.00	24	——	——
5	21.25	19.65	15	20.20	19.25	25	19.90	——
6	——	19.80	16	20.10	19.40	26	19.75	——
7	21.25	19.65	17	19.75	19.45	27	——	20.15
8	——	19.15	18	19.80	——	28	19.30	20.00
9	20.25	19.35	19	19.80	19.75	29	19.40	20.20
10	19.85	19.25	20	——	19.70	30	19.50	20.10
						31	——	20.10

Average Monthly Price Per Pound

Month	1925 Cents	1926 Cents	1927 Cents	Month	1925 Cents	1926 Cents	1927 Cents
Jan.	23.99	20.85	13.42	Aug.	23.72	18.57	20.04
Feb.	24.70	20.60	14.10	Sept.	23.79	17.02	21.95
Mar.	25.64	19.35	14.32	Oct.	21.77	13.14	20.55
Apr.	24.54	19.13	14.75	Nov.	20.94	12.86	20.22
May	23.41	18.92	16.07	Dec.	20.06	12.68	19.58
June	24.13	18.57	16.85	Average			
July	24.68	18.71	18.00	for Year	23.45	17.53	17.49

Stock of Crude Rubber in the U. S.

(All Quantities in Long Tons)

At	ON HAND			AFLOAT			ON HAND AND AFLOAT		
End of	1925	1926	1927	1925	1926	1927	1925	1926	1927
Jan.	60,870	55,198	76,172	36,759	46,296	45,312	97,629	100,484	121,484
Feb.	54,109	58,035	91,186	41,475	46,935	42,166	95,584	104,970	133,352
March	52,494	61,822	85,740	40,577	43,567	49,600	93,071	105,389	135,340
April	50,143	55,261	92,757	53,465	41,905	38,963	103,608	97,166	131,720
May	52,064	64,360	94,563	46,846	40,303	44,181	98,910	104,663	138,744
June	50,997	60,460	89,250	51,202	40,907	47,233	102,199	101,367	136,483
July	46,245	64,900	98,469	46,003	38,062	40,587	92,248	102,962	139,056
Aug.	42,354	60,870	96,148	41,254	37,360	40,937	83,608	98,230	137,085
Sept.	36,367	62,078	97,829	55,151	42,464	37,966	91,518	105,542	135,793
Oct.	34,085	64,089	97,452	51,098	52,930	42,804	85,183	117,919	140,256
Nov.	34,885	69,385	101,034	42,692	47,311	37,076	86,577	116,696	138,110
Dec.	51,215	72,520		48,208	52,020		99,423	124,540	

(Rubber Association of America figures raised to 100%.)

Stock of Crude Rubber in London

(No. of tons in Wharves and Warehouses, including Latex)

At end of:	1920	1921	1922	1923	1924	1925	1926
January	19,300	56,573	67,252	73,498	57,460	27,172	9,994
February	18,329	59,439	67,623	70,483	56,732	23,425	10,005
March	18,969	63,913	66,670	63,438	55,647	18,104	13,750
April	20,072	68,759	68,637	58,770	54,559	12,949	18,951
May	20,921	70,403	70,146	54,439	51,615	5,895	20,896
June	22,517	69,408	71,597	51,050	51,115	5,318	23,894
July	25,346	71,065	71,515	49,937	52,073	4,258	27,727
August	30,674	73,211	72,112	48,427	49,700	4,619	30,764
September	35,504	72,175	70,977	54,523	44,011	5,453	35,077
October	41,743	69,229	68,536	58,891	37,523	5,086	42,141
November	45,550	70,786	68,548	60,074	33,593	3,869	44,057
December	50,652	69,792	72,299	60,246	29,488	5,697	48,921

At End of Recent Weeks

	First Saturday	Second Saturday	Third Saturday	Fourth Saturday	Fifth Saturday
1927					
January	48,943	50,756	52,484	53,662	54,786
February	55,740	56,939	56,962	58,659	—
March	59,945	61,516	61,300	63,167	—
April	62,634	63,861	65,033	65,511	67,034
May	68,187	68,041	66,668	67,054	—
June	67,105	67,454	66,894	64,486	—
July	63,917	64,163	63,511	62,819	63,626
August	64,177	64,557	64,842	64,259	—
September	65,162	66,148	66,664	67,253	—
October	68,519	70,167	70,916	70,060	69,551
November	69,660	69,501	69,850	67,318	—
December	65,869	66,011	64,761	63,397	63,207

Rubber in Singapore and Penang

(Stocks held by Dealers—Quantities in Long Tons)

End of	1925	1926	1927	End of	1925	1926	1927
Jan.	15,925	16,726	25,440	July	15,894	23,101	22,558
Feb.	17,320	13,653	26,766	Aug.	17,251	23,362	25,764
Mar.	17,261	18,389	27,844	Sept.	16,526	25,997	25,178
Apr.	15,368	16,328	24,543	Oct.	15,346	26,614	25,790
May	15,804	16,967	25,133	Nov.	19,788	25,486	28,369
June	15,884	19,416	21,898	Dec.	18,840	26,443	

Rims Inspected and Passed in U. S.

(Tire and Rim Association Reports)

	Total	Per Cent Balloons		Total	Per Cent Balloons
1923	23,140,620	0.6	1925	26,001,664	66.8
1924	21,863,311	19.7	1926	24,199,524	78.8
1927					
January	1,489,078	77.0	July	1,679,587	84.4
February	1,753,224	84.4	August	1,825,905	80.2
March	2,071,989	85.1	September	1,727,122	77.7
April	2,060,868	88.0	October	1,354,924	81.4
May	2,169,208	86.9	November	838,591	67.8
June	1,871,538	77.0	December		

U. S. Consumption of Gasoline

(In Barrels of 42 Gallons)

MONTHS	1924	1925	1926	1927
January	11,918,000	14,386,000	17,582,000	17,888,000
February	9,626,000	13,210,000	15,814,000	18,240,000
March	10,961,000	14,890,000	19,302,000	22,464,000
April	14,583,000	19,013,000	20,848,000	23,371,000
May	15,889,000	20,459,000	24,213,000	26,579,000
June	16,421,000	20,724,000	23,803,000	27,799,000
July	18,610,000	22,879,000	24,752,000	29,784,000
August	19,825,000	22,323,000	26,912,000	29,779,000
September	16,871,000	20,177,000	22,929,000	28,409,000
October	18,029,000	19,826,000	23,973,000	25,497,000
November	16,607,000	18,024,000	20,618,000	24,400,000
December	15,663,000	17,954,000	21,419,000	
TOTAL	185,003,000	223,865,000	262,165,000	

U. S. Tire and Tube Statistics

(All Figures Represent Thousands)

AUTOMOBILE CASINGS

Figures for Recent Years

	1922	1923	1924	1925	1926
Production	40,932	45,259	51,633	60,845	61,237
Shipments	39,987	45,204	50,120	59,262	59,002
Inventory[2]	6,132	5,772	7,427	8,142	10,456

Figures for Recent Months

	PRODUCTION			SHIPMENTS			INVENTORY		
	1925	1926	1927	1925	1926	1927	1925	1926	1927
Jan.	4,740	4,587	4,965	4,013	2,974	4,932	7,949	9,947	10,432
Feb.	4,908	4,865	5,095	3,924	3,436	4,458	8,928	11,164	11,075
Mar.	5,276	5,456	6,276	4,657	4,561	5,701	9,510	12,004	11,583
Apr.	5,341	5,346	6,299	5,498	4,980	5,701	9,088	12,461	12,122
May	5,467	5,023	6,151	5,954	5,211	5,657	8,611	12,343	12,462
June	5,418	5,422	6,202	6,737	5,724	6,253	7,243	11,968	12,462
July	5,587	4,950	5,087	6,298	6,337	5,973	6,421	10,592	11,826
Aug.	5,607	5,872	5,752	4,760	6,744	6,393	7,261	9,732	10,721
Sept.	5,007	5,706	4,822	4,569	6,040	5,717	7,681	9,318	9,722
Oct.	4,505	5,103	4,777	5,580	4,544	4,799	6,670	9,917	9,667
Nov.	4,229	4,324		3,671	3,733		6,955	10,297	
Dec.	4,760	4,683		3,601	4,718		8,142	10,456	

AUTOMOBILE INNER TUBES

Figures for Recent Years

	1922	1923	1924	1925	1926
Production	50,850	60,116	70,706	82,614	76,618
Shipments	49,673	59,072	68,016	81,004	71,591
Inventory[2]	7,643	8,425	11,052	11,313	16,200

Figures for Recent Months

	PRODUCTION			SHIPMENTS			INVENTORY		
	1925	1926	1927	1925	1926	1927	1925	1926	1927
Jan.	6,343	6,809	5,337	5,576	3,723	6,016	11,570	14,361	15,585
Feb.	6,339	6,825	5,658	4,971	3,736	5,120	13,023	17,090	16,075
Mar.	7,000	7,030	7,184	5,711	4,987	6,157	14,236	19,131	17,096
Apr.	6,851	6,554	7,373	6,704	5,051	6,359	13,618	20,674	17,801
May	6,846	6,149	6,737	8,040	6,304	6,140	12,501	21,141	18,389
June	6,942	6,171	6,306	9,032	6,898	6,832	10,409	20,243	17,858
July	7,544	5,729	5,284	9,140	8,569	7,070	8,635	17,267	16,004
Aug.	7,618	7,424	6,480	6,923	9,579	7,983	9,271	15,462	14,664
Sept.	7,254	7,590	5,651	6,665	7,762	6,758	9,950	15,312	13,511
Oct.	6,612	6,208	5,065	7,845	5,474	5,024	8,726	15,929	13,539
Nov.	6,256	4,852		5,406	4,045		9,491	16,604	
Dec.	6,999	5,277		4,991	5,463		11,313	16,200	

(1) Rubber Association of Amreica figures, raised to 100%. The Association estimates its figures to be 75% representative or complete when issued and that basis has been accepted when preparing the statistics in this table.

(2) Held by manufacturers at end of period indicated.

Automobile Production

	Passenger Cars			Trucks		
	Total	United States	Canada	Total	United States	Canada
1920	1,883,158	1,799,522	83,636	322,039	311,531	10,508
1921	1,514,000	1,452,902	61,098	147,550	142,402	5,148
1922	2,397,827	2,302,923	94,904	251,434	244,285	7,149
1923	3,719,164	3,589,936	129,228	378,288	361,078	17,210
1924	3,262,764	3,144,999	117,765	378,106	360,625	17,481
1925	3,817,639	3,678,328	139,311	498,019	475,941	22,078
1926						
January	284,703	272,922	11,781	33,461	29,763	3,698
February	334,524	319,763	14,761	41,685	37,608	4,077
March	399,105	381,116	17,989	49,233	44,848	4,385
April	401,836	383,907	17,929	53,887	50,314	3,573
May	394,569	373,140	21,429	51,343	47,838	3,505
June	358,360	339,542	18,818	47,043	44,110	2,933
July	328,816	315,863	12,953	41,847	39,592	2,255
August	393,040	380,258	12,782	47,907	45,404	2,503
September	363,537	350,913	12,624	51,299	46,428	4,871
October	300,142	289,547	10,595	46,965	42,890	4,075
November	226,278	219,504	6,774	39,410	36,356	3,054
December	143,413	137,361	6,052	30,002	28,302	1,700
TOTAL	3,928,323	3,766,336	161,487	534,082	493,453	40,629
1927						
January	208,718	196,973	11,745	40,874	37,243	3,631
February	275,458	260,632	14,826	41,947	38,118	3,829
March	360,754	341,665	19,089	48,590	45,056	3,534
April	373,961	353,071	20,890	48,216	44,495	3,721
May	374,259	352,268	21,991	47,890	44,173	3,717
June	290,188	273,718	16,470	43,003	40,265	2,738
July	242,144	233,425	8,719	32,249	29,981	2,268
August	281,464	271,325	10,139	34,552	31,715	2,837
September	233,694	225,013	8,681	35,145	32,564	2,581
October	191,942	185,706	6,236	37,141	35,586	1,555
November	114,076	108,903	5,173	25,743	24,299	1,444
December						

Exports of Crude Rubber from Principal Producing Countries

(*Long Tons*)

	BRITISH MALAYA[1]							DUTCH EAST INDIES[3]							
	Gross Exports	Imports	Gross Exports Minus Imports	Ceylon[2]	India & Burma[3]	Sarawak[4]	British North Borneo[4]	Siam[4]	Java & Madura	Sumatra E. Coast	Other D.E.I.	Indo-China[5]	Amazon Valley[6]	All Other[6]	World Total[7]
1923	252,016	70,432	181,584	39,971	6,416	5,705	4,287	1,718	32,930	46,344	57,822	5,067	16,765	7,856	406,955
1924	259,706	108,524	151,182	39,997	7,697	6,699	4,621	2,962	42,446	54,497	80,347	6,688	23,165	9,065	429,366
1925	316,825	158,022	158,803	49,566	10,082	5,424	5,377	5,377	46,757	65,499	120,626	7,881	25,298	13,797	517,523
1926:															
Jan.	30,452	10,237	20,215	4,246	1,273	416	472	289	4,110	6,239	8,165	866	1,284	1,805	49,380
Feb.	30,440	8,306	22,134	5,120	725	488	450	253	4,524	5,717	6,854	554	2,759	1,978	51,556
Mar.	35,012	14,800	20,212	5,177	1,113	792	561	418	4,527	5,566	11,984	573	2,126	1,899	54,948
Apr.	23,727	10,565	13,162	3,766	590	679	374	293	4,226	4,598	6,285	410	2,318	1,529	38,230
May	31,231	10,604	20,627	3,944	691	927	410	279	4,440	5,358	8,737	502	1,353	1,464	48,732
June	30,624	11,764	18,860	4,208	452	779	512	275	4,444	6,125	10,614	549	1,213	1,279	49,310
July	28,824	15,280	13,544	4,422	938	911	498	439	4,618	5,612	13,112	1,521	1,565	1,148	48,328
Aug.	34,625	13,595	21,030	5,666	521	890	476	316	4,132	5,699	10,390	378	1,888	1,097	52,483
Sept.	35,913	13,972	21,941	6,015	651	888	689	457	4,065	6,568	11,391	681	2,156	822	56,324
Oct.	39,367	15,203	24,164	5,672	634	805	473	385	4,058	6,998	11,491	661	1,904	1,023	58,268
Nov.	34,302	12,201	22,101	4,228	1,110	685	547	285	3,988	5,816	9,422	718	1,911	1,259	52,070
Dec.	36,811	14,716	22,095	6,498	1,176	895	617	338	5,054	7,117	12,786	790	3,821	714	61,901
	391,328	151,243	240,085	58,962	9,874	9,155	6,079	4,027	52,186	71,413	121,231	8,203	24,298	16,017	621,530
1927:															
Jan.	34,946	14,995	19,951	6,697	921	959	585	304	4,184	6,705	10,541	941	2,885	981	55,654
Feb.	27,523	11,607	15,921	3,571	1,469	552	445	360	4,707	6,526	10,634	675	2,082	1,098	48,040
Mar.	41,346	17,464	23,882	7,142	1,124	997	639	432	5,657	7,003	12,490	733	3,203	1,791	65,093
Apr.	29,041	13,069	15,972	3,349	723	984	452	526	4,666	5,530	10,035	557	2,374	1,495	46,663
May	31,393	15,491	15,902	3,124	760	786	418	342	5,432	5,522	14,292	586	2,432	1,207	50,616
June	32,607	14,706	17,901	3,348	856	1,100	539	409	4,818	5,519	9,402	772	1,030	1,706	47,400
July	23,947	12,697	11,250	4,018	827	859	500*	333	4,771	6,140	11,663	519	1,713	1,115	*43,708
Aug.	30,371	17,105	13,266	5,357	688	1,133	500*	546	4,355	6,683	12,054	716	2,004	969	*48,271
Sept.	29,835	12,095	17,740	4,911	479	645	500*	498	3,635	6,052	10,059	497	2,474	1,000*	*48,490
Oct.	29,846	15,801	14,045	5,245		721	500*	452	3,810	7,755	13,633	775	2,704		
Nov.	28,277	19,860	8,417			1,241	500*	600				683	2,547		
Dec.	32,185	17,865	14,320												

(1) Mayalan net exports cannot be taken as production, since imported rubber is largely wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 115 tons in 1923, 1,117 in 1924, 3,618 in 1925, and 3,263 in 1926. (2) Ceylon Chamber of Commerce statistics until 1926; rubber exported as latex is not included—such shipments were equivalent to 13 tons in 1923, 93 tons 1924, 6 tons 1925, and about 20 tons in 1926. (3) Official statistics. (4) Imports into Singapore and Penang. (5) Exports from "Other D.E.I." are chiefly wet native rubber, which is reduced about one-third in weight by remilling; rubber exported as latex is not included which on a basis of 3½ pounds per gallon amounted to 2,342 tons in 1923, 1,008 tons 1924, 2,239 tons 1925, and about 60 tons in 1926. (6) Calculated from official import statistics of principal consuming countries, viz., United States, United Kingdom, France, Germany, Italy, Belgium and Netherlands. This figure includes guayule rubber. (7) This total includes the third column for British Malaya, "Gross Exports minus Imports," and all the figures shown for the other territories. *Figure is provisional; final figure will be shown immediately it becomes available.

Net Imports of Crude Rubber into Principal Manufacturing Countries

(*Long Tons*)

	United States*	United Kingdom	France (h)	Germany	Canada (ac)	Japan (ac)	Italy	Russia (ce)	Australia (cd)	Belgium (d)	Netherlands	Scandinavia (abcdf)	Spain (g)	Czechoslovakia (abcd)	World Total
1919	236,977	42,671	17,685	5,584	6,395	9,753	9,894	75	1,002	3,995	2,771	3,149	2,418	9	342,378
1920	248,762	56,844	13,885	11,890	11,746	5,297	6,123	62	1,815	3,840	5,510	2,292	2,008	567	370,641
1921	179,678	42,087	15,135	21,920	8,124	21,713	3,906	165	1,014	1,705	1,022	1,279	2,245	569	300,562
1922	296,267	11,724	24,852	27,546	9,207	15,934	6,430	2,493	2,643	172	-3,807	1,778	589	567	395,885
1923	300,372	12,700	27,392	18,519	13,277	15,372	8,489	2,986	1,649	2,184	792	2,528	630	1,128	408,018
1924	317,747	-11,550	30,446	22,727	14,299	19,571	8,764	2,346	3,124	2,688	-807	3,178	944	1,370	414,847
1925	381,815	4,061	32,956	33,937	19,683	11,117	11,412	7,088	4,757	2,930	875	3,149	1,155	1,558	516,493
1926	395,667	34,865	34,240	22,775	20,229	18,125	9,809	6,529	9,021	2,498	2,670	4,046	1,299	1,870	613,643
1926:															
January	40,345	6,886	2,832	703	2,188	892	760	332	438	76	163	303	89	134	56,141
February	31,435	3,114	3,063	1,113	1,865	741	1,041	643	512	143	88	397	145	75	44,375
March	40,316	8,907	3,941	1,342	2,079	864	1,037	832	547	129	227	377	109	161	60,868
April	33,416	3,275	4,121	1,781	1,615	1,868	865	402	505	71	93	335	130	193	53,670
May	28,705	6,773	2,519	1,848	1,239	1,010	705	200	468	186	241	225	60	192	44,371
June	23,795	5,894	2,196	1,655	1,188	1,465	1,070	983	636	269	215	303	123	103	39,8[illegible]
July	34,266	6,768	2,352	2,202	1,552	1,447	800	132	702	295	480	292	121	115	51,8[illegible]
August	26,081	7,327	2,457	2,110	1,888	1,284	796	655	1,275	303	594	336	90	151	45,347
September	35,675	8,843	1,774	2,029	1,355	1,922	819	472	1,241	288	429	317	91	138	55,388
October	28,110	8,082	3,376	2,423	1,865	2,396	645	585	1,004	301	2	360	100	121	49,370
November	37,673	9,247	2,719	3,007	1,548	3,380	832	568	916	194	-18	358	90	181	60,695
December	35,850	4,749	2,890	2,562	1,847	856	439	725	777	248	156	443	151	306	51,999
1927:															
January	41,815	10,192	3,284	2,481	1,936	1,227	672	803	929	296	181	316	139	100	64,371
February	25,886	7,692	3,263	3,103	2,620	1,902	601	907	460	502	153	336	146	210	47,781
March	32,782	9,049	2,050	3,475	3,760	1,578	852	784	780	454	86	385	137	127	56,026
April	44,627	7,875	2,310	2,393	1,509	2,181	781	1,972	762	448	58	230	177	218	65,541
May	33,761	2,896	2,006	3,380	2,519	1,084	918	887	694	633	-57	335	155	223	49,434
June	31,270	2,282	2,387	3,632	2,086	798	942	1,506	557	575	-16	243	164	183	46,609
July	35,720	1,116	2,384	2,946	2,104	1,505	1,007	415	900	436	66	227	177	236	49,239
August	31,001	3,463	2,795	3,119	2,013	1,970	1,274	386	650	604	-63	312	138	123	47,785
September	28,704	7,800	1,956	2,891	1,850	2,025	684	518	750	552	-32	451	155	272	48,576
October	27,671	5,888	4,302	4,202	1,790	1,966		1,075	908	465	156				
November	36,123														
December															

a—Including gutta percha. b—Including balata. c—Re-exports not deducted in monthly statistics. d—Including some scrap and reclaimed rubber. e—United Kingdom exports to Russia, and beginning with October, 1927, exports from the United States to Russia. f—Including Norway, Sweden, Denmark and Finland. g—United Kingdom and French exports to Spain except in years prior to 1925. h—French imports have been reduced 12 per cent in order to eliminate imports of gutta percha and to reduce to basis of net weight. *United States imports of guayule are not included in this compilation; such imports amounted to 4,305 tons in 1926 and averaged about 400 tons monthly during the first ten months of 1927.

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